MYRMECIA

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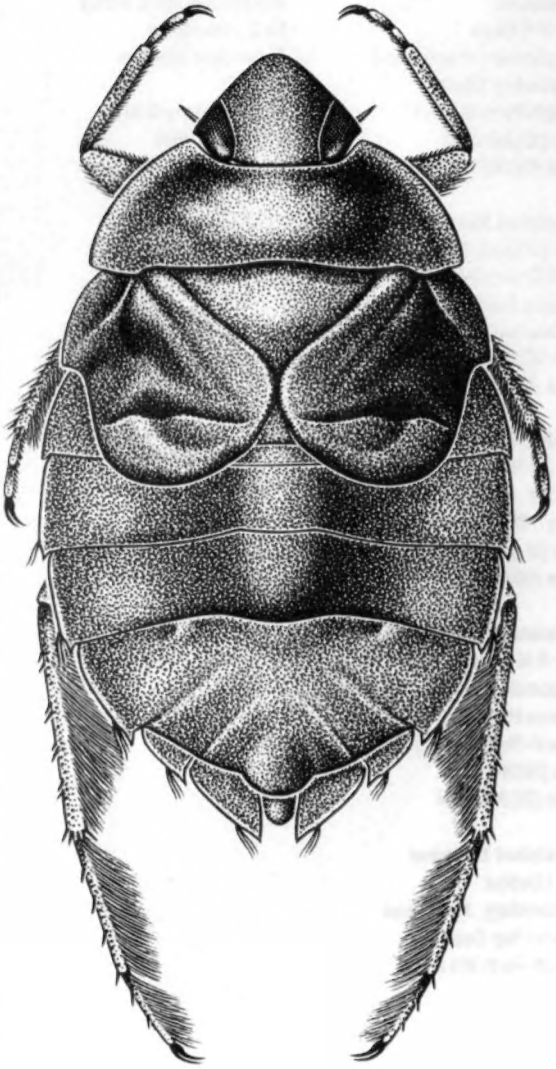

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THE COVER

The cover illustration for this year's ***Myrmecia*** features an illustration from the forthcoming new edition of "Insects of Australia". The illustration is by Dr. S.P. Kim, one of the CSIRO artists who have been working on the numerous new plates for the book. The species shown is *Aphelocheirus australis* Usinger, a member of the family Naucoridae (Hemiptera). This aquatic species occurs rarely in northern Australia. The morph illustrated is brachypterous.

NOTICE

Statements made in ***Myrmecia*** do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

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MYRMECIA

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Copy Deadline for Next Issue

Material for publication in the August 1991 issue of ***Myrmecia*** should be in the hands of the Editor at his address on the inside the front cover by **Friday, July 26**. Fax transmission may be used to (07)8461918 but care should be taken to ensure legibility and hard copy should be posted simultaneously. Material may be submitted on floppy disk. Any common word processor format is acceptable but "Microsoft WORD" is preferable.

***Myrmecia* Advertising rates**

	Single Issue	Four Issues (One Year)
Full Page	$60	$180
Half Page	$35	$105
Quarter Page	$24	$72

These rates apply to camera-ready copy supplied by the advertiser. Where this is not supplied a small additional charge may be made for the layout.

In addition, loose inserts and pamphlets supplied by the advertiser will be included in a mailout for $50 per item. The items should be of a size which will not project beyond the pages of ***Myrmecia.***

FROM THE PRESIDENT

Recently I had a visit from Dr David Widdup, Executive Director of the Federation of Australian Scientific and Technological Societies (FASTS). He urged the Society to put the concerns of its members to FASTS itself, and also to appropriate members of parliament. In the near future I will be responding to this invitation, and once again (ever hopeful) seek your input on what views should be expressed. Obviously, any submission we make will be stronger if it includes the opinions of a wide range of members. I know there is deep concern in the entomological community about career structure, education and training, the anomalous position of technical officers (often with honours or master degrees but usually given little independence and rockbottom pay scales), security of employment, ARC in both its present and future operations; ABRS, etc, etc, etc, etc. What else? What do our excellent post-graduate students have to look forward to? What can we do to encourage changes in government policy that will benefit the profession as a whole and make the insect sciences attractive as careers for our best students? Pick up your pen, or get to your computer, or phone or FAX and let me know! (Realistically, FAX or mail will be most efficient. As one of this year's ARC victims, I spend most of my time out of my office, washing up, counting insects and so on, and you could waste a lot of time trying to reach me by phone!). It would be particularly helpful if Regional Councillors could canvass opinion in institutions within their own constituencies and pass a summary back to me.

A further item that may be of interest is a request we had from Senator Coulter to urge support for the Democrats' Bill to ban the importation of rainforest timber. A quick consensus of the Secretary, Vice President and President decided that this was appropriate and I therefore wrote to the Prime Minister, Leader of the Opposition, Minister for Science and Shadow Minister for Sciences, expressing our concerns about loss of biodiversity, and degradation of the global environment. The Shadow Minister has since responded with a document outlining the Oppositions's policy. This situation, where a decision to act (or not to act) had to be made on the run, underlines the Society's lack of a formal conservation policy. I believe most members have an interest in conservation matters on a broad and/or a local scale, but the Executive was not overwhelmed with responses to my invitation (last *Myrmecia*) to comment on these issues. I hope Lionel Hill got more feedback on his excellent and positive suggestions in the same issue, and that Penny Greenslade (November *Myrmecia*) aroused some interest with her suggestions for future operations of the Conservation Committee.

As you may remember, there is a review in progress concerning the Society's various awards and honours. In general, although the review is still not finalised, I expect that the outcome will see little change in most areas, with a possible relaxation of our guidelines in some (notably the Illustration Award, where I will recommend allowing a professional section). The one exception is the Mackerras Medal honouring the memory of the founding father and first President of the Society. There is a strong body of opinion that the age limit (at present 50) should be reduced, with 40 being the most popular suggestion. We are also trying to define more clearly the criteria for the award. Some kind of phase - in period for the new age limit (if recommended) is likely. It's not too late to comment on this or other matters!

Council will discuss the various issues at the Melbourne meeting in July. Once again, I thank all those who responded to my first, and even my second, requests for advice on these matters. It was disappointing, however, to receive no comment from any member outside the ranks of past presidents and vice presidents, and present members of Council and committee conveners. There was also a lack of response from the majority of Regional Councillors. This may show a touching faith in the management, a lack of interest or pressure of other more immediate business, (a problem that undoubtedly affects us all), but I remind Regional Councillors that they are the channel through which the opinions of their local members can best be directed to the Executive and of course to Council itself. The position is one in which communication is all-important, and the Regional Councillors have an essential role to play in our Society.

I look forward to meeting as many members as possible in Melbourne, and remind you that the following meeting is scheduled for February in Tasmania. 1992 will see a busy calendar of entomological meetings, with our own in February, the Australian Applied Entomological Research Congress in May (Canberra) and the International Congress of Entomology in mid-year (Beijing). Inevitably many members will have to make difficult choices in 1992, but I urge you to support our Tasmanian Organising Committee and hope to see a good turn-out for our 1992 meeting. If you haven't been to an AGM for a while, if you can't afford to go to China, if applied entomology puts you to sleep — try to be at the Tasmanian meeting.

Best wishes to you all,

Dinah Hales
President

Executive Quarterly Report

MEETINGS

The Executive met on 21 February, 19 March and 16 April 1991..

NEW MEMBERS

We welcome the following new members:

Elected 21 February, 1991

Mr W. QIAO, MSc, Department of Zoology, La Trobe University, Bundoora, VIC 3083. Qiao is interested in taxonomy, zoogeography, behaviour and forest and agricultural entomology.

Elected 19 March, 1991

Nil

Elected 16 April, 1991

Mr H.G. PERONA, BForSci, Department of Primary Industries, GPO Box 2268, Darwin, NT 0801. Hermes is a Plant Science Officer and is interested in the collection of Coleoptera.

Mr E. TURAK, BSc, 3/28 Albert Street, Petersham, NSW 2049. Eren is a student who is interested in insect diversity, aphids and taxonomic illustration.

Dr B.H. GUNN, PhD, Ciba-Geigy Aust Ltd, 235 Settlement Road, Thomastown VIC 3074. Brian is a marketing manager who is interested in biocontrol of weeds and insecticide development and marketing.

Miss W. CHOKBOWONTHANSARN, Department of Zoology, University of Western Australia, Nedlands, WA 6009. Wandee is a student who is interested in biocontrol.

Miss C. PETERS, Victorian Institute of Animal Science, 47-485 Mickleham Road, Attwood, VIC 3049. Caroline is a Medical Entomologist investigating arboviral disease in Victoria.

RESIGNATIONS

The following resigned from membership in the past quarter:

Mr G.G. BECK, 28 Oxford Street, Hillcrest, SA 5086.

Mr W.J. BURKE, 45 Goodwin Street, West Ryde, NSW 2114.

Changes of address or title

Mr A.J. ALLWOOD, PO Box 10538, Nabua, Suva, Fiji.

Dr A.D. AUSTIN, Department of Crop Protection, Waite Agricultural Research Institute, Private Bag 1, Glen Osmond, SA 5064.

Ms E. BAKER, Department of Entomology, University of Queensland, St Lucia, QLD 4072. Also changes from ordinary to student membership.

Dr J.K. BALCIUNAS, USDA Biological Control Unit, Tropical Resource Centre, James Cook University, Townsville, QLD 4811.

Mr I.C. BARRASS, Institute for Sustainable Development, Tatura, VIC 3616.

Dr L. BARTON BROWNE, CSIRO Long Pocket Laboratories, Private Bag No. 3, PO, Indooroopilly, QLD 4068.

Mr P.R. BIRKS changes to retired membership.

Ms R. BROE, to receive News Bulletin only.

Mr C.P. CANTY, c/- Ms B.J. Vorpagel, Incitec Ltd, PO Box 140, Morningside, QLD 4170.

Mr M. CASIMIR, 17 Cotswold Road, Strathfield, NSW 2135.

Mr P.G. COLE, Institute of Plant Science, Swan Street, Burnley, VIC 3121.

Dr D.F. COOK, Western Australian Department of Agriculture, Baron- Hay Court, South Perth, WA 6151.

Dr P.E. COOMBE, 27 Goldfinch Court, Theodore, ACT 2905.

Ms G.M. DOLVA, 71A Banksia Street, Joondanna, WA 6060.

Dr R. DOMROW, 49 Clyde Road, Herston, QLD 4006.

Dr P.B. EDWARDS, CSIRO Biological Control Unit, Department of Zoology, University of Capetown, Rondebosch 7700, South Africa.

Mr R.N. EMERY, Entomology Branch, Department of Agriculture, 3 Baron-Hay Court, South Perth, WA 6151.

Ms J.M. ERBACHER changes from full to student membership.

Dr G. FARRELL, CSIRO Entomology, PMB 44, Winnellie, NT 0820.

Dr J.R.J. FRENCH, CSIRO Division of Forest Production, Private Bag 10, Clayton, VIC 3168.

Mr B. FROST, Postgraduate Laboratory, Department of Crop Protection, Waite Agricultural Research Institute, Glen Osmond, SA 5064.

Dr I. GALLOWAY, Land Protection Branch, Lands Department, 16th floor, 141 Queen Street, Brisbane, Q 4000.

Mr J.D. GILLETT, 'Wondaree' Friday Hut Road, Tintenbar, NSW 2479.

Dr D.L. HANCOCK, 5 Bogong Street, Riverhills, QLD 4074.

Mr L. HILL, Department of Primary Industry, Tasmania, PO Box 303, Devonport, TAS 7310.

Dr P.B. HUGHES, Zoecon Aust. Pty Ltd, PO Box 101, North Ryde, NSW 2113.

Mr R.W. KERR changes to retired membership.

Dr S.P. KIM, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601.

Dr C.S. LI changes to retired membership.

Fr B.B. LOWERY, Catholic Presbytery, PO Box 362, Devonport, TAS 7310.

Dr A.P. MACKEY, 51 Aberfoyle Street, Kenmore, QLD 4069.

Dr A.D. MARCHANT, University of East Anglia, Norwich, NR4 7TJ, England.

Dr H. MARIATH, 27 Goldfinch Court, Theodore, ACT 2905.

Mr S. McNAB, Changes from full to student membership.

Mr A.J. MICK, Bowen Street, Mundubbera, QLD 4626.

Mrs C.J. NEALE, 21 Frank Street, Graceville, QLD 4075.

Dr B.P. OLDROYD, United States Department of Agriculture, Agricultural Research Station, 1157 Ben Hur Road, Baton Rouge, LA 70820, United States of America. Also changes from ordinary membership to News Bulletin only.

Dr S. O'NEILL, Department of Entomology, University of Illinois, 505 5th Goodwin Avenue, Urbana, IL 61801, United States of America.

Mr A.J. ORR changes from student to full membership.

Mr D. PRIJONO, University of Queensland, Gatton College, Box 74, Lawes, QLD 4343.

Ms S. ROZARIO, Department of Ecology and Evolutionary Biology, Monash University, Clayton, VIC 3168.

Mr D. RUGG, MSD Veterinary Research and Development Laboratories, PO Box 135, Ingleburn, NSW 2565.

C. SATASOOK, Zoology Department, Faculty of Science, Prince of Songkla University, PO Box 3, Haad-Yai, 90112, Thailand.

Dr A.V. SPAIN, 1107 Ross River Road, Rasmussen, QLD 4815.

Dr P.P. STAHLE, 84 Richmond Terrace, Richmond, VIC 3121.

Mr M.S. UPTON changes from full to retired membership.

Dr A. WELLS, Museums and Art Galleries of Northern Territory, GPO Box 4646, Darwin, NT 0801.

Dr S.L. WENTWORTH, Department of Ecology and Evolutionary Biology, Monash University, Clayton, VIC 3168.

Miss R.L. WHYTE, 46 Aberfoyle Street, Kenmore, QLD 4069.

From the minutes

The appointment of Dr Alan Yen as one of the two regional councillors for Victoria has now been approved.

Dr R. Domrow has recently resigned from the Editorial Board of the Journal and the Executive have also thanked him for his contribution. The Executive have now ratified the following new appointments to the Editorial Board

Dr P.T. Bailey, Adelaide
Dr W.J. Bailey, Nedlands
Dr B.K. Cantrell, Indooroopilly
Dr M.J. Fletcher, Rydalmere
Dr D.J. Rogers, Kingaroy
Dr R.C. Russell, Westmead

Australian Entomological Society

NOTICE OF 22ND ANNUAL GENERAL MEETING

The Society's 22nd Annual General Meeting will be held at the University of Melbourne on Tuesday, July 16, 1991 at 5.00 pm.. The agenda is in this issue of "Myrmecia".

Call for Nomination of Office Bearers and Councillors

The following offices will fall vacant at the Society's 22nd Annual General Meeting on July 16, 1991. Nominations for election should be made on the form adjacent and should reach the Secretary no later than June 5, 1991.

President	Assoc Prof D.F. Hales
Vice President	*Dr T.J. Ridsdill-Smith
Secretary	*Assoc Prof J.D. Majer
Treasurer	*Mr P.R. Davis
Public Officer	*Dr I.D. Naumann
Chief Editor	*Dr P.G. Allsopp
Business Manager	*Dr J.F. Donaldson
News Bulletin Editor	*Dr G.B. Monteith
Technical Editors	*Dr A.L. Bishop
	*Dr I.D. Naumann
	*Dr G.G. White

Regional Councillors

Qld	Mr D.H. Foley
	Mr B. Franzmann
	Mr R.I. Storey
NSW	+Dr D.G. James
	+Dr D.J. Bickel
	Ms M. Geary
VIC	Mrs J.A. Horne
	Dr A. Yen
ACT	+Dr P. Cranston
	Dr E.J. Wright
SA	Dr A.D. Austin
TAS	+Mr L. Hill
WA	Mr J. van Schagen
NT	Mr P. Dostine

* position not vacant
+ not eligible for re-election to this office

AUSTRALIAN ENTOMOLOGICAL SOCIETY INCORPORATED 22ND ANNUAL GENERAL MEETING

University of Melbourne at 5pm on Tuesday, July 16th, 1991.

Agenda

1. Opening
2. General announcements
3. Announcements of proxies and apologies
4. Deaths of members recorded since 21st Annual General Meeting
5. Minutes of 21st Annual General Meeting (published in *Myrmecia*, August 1990
6. Matters arising from the minutes
7. Executive Annual Report, including reports of Treasurer, Chief Editor, News Bulletin Editor and Business Manager
8. Committee Reports:
   (i)Conservation Committee
   (ii)Marketing Promotion Committee
9. Competitions — announcements of awards:
   (i)Phil Carne Student Prize 1991
   (ii)Biological Illustration Competitions 1991
10. Australian Entomological Society Research Awards — announcements of recipients for 1991
11. Membership of the Biological Council of Australia
12. Review of the Society's Awards and Prizes:
    (i)Honorary Life Membership
    (ii)Mackerras Medal
    (iii)Illustration Award
    (iv)Phil Carne Student Prize
    (v)Research Grants
13. Business arising from the 41st Council Meeting
14. Announcement of Office-bearers and Councillors for 1991
15. Report of the 22nd Annual General Meeting Organising Committee
16. Report of the 23rd Annual General Meeting Organising Committee
17. Other business (arranged with the Secretary no later than June 14)
    Conservation Committee
18. Close

NOMINATION OF OFFICE BEARERS

(This completed form should reach the Secretary by 5 June, 1991)

I Nominate: .....

for election to the office of: .....

Name of nominator: .....

Signature: .....

Date: .....

I second this nomination: .....

Name of seconder: .....

Signature: .....

Date: .....

I accept this nomination*
Signature: .....

Date: .....

* This nominee is requested to attach a typed statement, not exceeding 300 words, which includes the following: his/her professional qualifications, address, institution, position held, fields of entomological interest, previous offices or appointments held in the Society; and other information which may be of assistance to members should a postal ballot be required (a photocopy of this form may be used).

AUSTRALIAN ENTOMOLOGICAL SOCIETY INCORPORATED APPOINTMENT OF PROXIES

(This completed form should reach the Secretary prior to the meeting(s) concerned)

I, ...

of .....

being a member of the above-named Society, hereby appoint .....

of .....

as my proxy to vote for me on my behalf at the Council Meeting, Annual or Special General Meeting, as the case may be, of the Society, to be held on the 14th-19th July, 1991.

Signed this ..... day of ..... 19...

(Signature) .....

(a photocopy of this form may be used).

Regional news

NORTHERN TERRITORY

DPIF — Quarantine and Inspection

While on leave in Adelaide in January, Ted Fenner was shown around the Pest Eradication Unit of the SA Department of Agriculture by Nick Perepelicia. They also looked at eradication procedures in use on a suburban fruit fly outbreak. Ted attended a meeting at AQIS in Canberra, on Area Freedom from fruit flies before returning to Darwin.

Hermes Perona has continued to collect insects associated with plants in the Top End, including ten days on the Tiwi Islands in April.

A mass migration of entomologists has coincided with the exceptionally good wet season. Donat Agosti (Swiss myrmecologist- at-large) visited in February, while April saw Rienk de Jong, of the Natural History Museum in Leiden, looking at skippers. There was an influx of CSIRO personnel in the same month, with Marianne Horak and Murray Upton seeking the elusive *Cryptophlebia ombrodelta*, and Don Sands and Veronica Brancotini having much more success with *Icerya aegyptica* and fruit-piercing moths. Rounding off the list of visitors, Mike Nunn (Bureau of Rural Resources), Steve Smith (Mexican-American Screw Worm Fly Project) and Phil Spradbery (CSIRO) reviewed preparedness against an incursion of *Chrysomya bezziana* in northern Australia.

DPIF — Weeds Section

The weeds section has been blessed with a deluge of visitors, Wendy Forno (CSIRO Brisbane) arrived to discuss the biological control of *Mimosa* and *Sida*. Rachel McFadyen (Queensland Department of Lands) called to discuss the potential problem of Siam weed introduction to Australia. This plant is a pest of most tropical regions, including parts of Indonesia. Lepidopterists Marianne Horak and Murray Upton (ANIC) spent some time chasing the ever elusive *Cryptophlebia*. Don Sands from CSIRO Entomology in Brisbane visited for discussion of the *Mimosa* program.

DPIF — Entomology Section

The abnormal wet season conditions experienced in January/February have caused several unusual entomological phenomena in the Top End and central Australia. These included a widespread outbreak of the day feeding

armyworm (*Spodoptera exempta*) in Pangola grass pastures, and significant defoliation of rambutan trees by the castor oil looper (*Achaea janata*). In the Centre, there were reports of large invasions of ponerine ants into a tourist complex south of Alice Springs, and psocids creating unbearable living conditions in Tennant Creek houses.

As the rains abated and standing water dried, dragonflies caused significant economic damage by depositing eggs on the shiny duco of new vehicles awaiting distribution in an importer's depot. Tony Watson (ANIC) became embroiled in the subsequent insurance claims with his expert opinions on dragonfly behaviour.

Keith Wilson, a Departmental trainee, commenced a 3 month stint with the Section in April. Half of the regular staff has enrolled in further study courses and the mental hum can be felt most lunch times.

The RIRDC (Rural Industries Research and Development Council) cashew industry review team visited Darwin in early April. The Section currently receives significant funding from this group. Other visitors to the Section included Marianne Horak and Murray Upton (ANIC). Don Sands (CSIRO Longpocket) presented a seminar on the latest Queensland and Pacific research on the control of the horticultural pest *Icerya aegyptica*.

NT Museum

The easing of the wet season in the Top End has led to increased insect and entomologist activity. Cas van Achterberg and Rienk de Jong from the Natural History Museum in Leiden broke their collecting trip to Lombok and Sulawesi to visit the Top End for one and two weeks respectively. Their main aim was to compare habitat types and representation of braconids and butterflies in the Top End with parts of nearby South-East Asia. As they departed, Marianne Horak and Murray Upton arrived for 10 days to search for the still very elusive tortricid moth, *Cryptophlebia*, supposedly lurking in seed pods in the vicinity of Darwin. When that mission failed, they set to and gathered an impressive collection of macro- and micro Lepidoptera, and an assortment of incidental insects, taken at lights. Their assistance and advice will be invaluable in further developments of the NT Museum collections.

Peter Dostine spent a day in the Museum checking over work on the caddisflies of the Alligator Rivers Region.

Alice Wells has been making regular trips to Kakadu as part of a project to monitor changes in the caddisfly fauna throughout the year. On a short visit to Timor, between sets of visitors to the NT Museum, she checked the Kupang area for future collecting trips and singing engagements.

Jenni Webber has joined the Entomology section of the Museum as a trainee T.O., and will proceed with a part-time Science degree at the NTU. She comes to the Museum with a keen interest in natural history.

CSIRO — Divisions of Wildlife and Ecology/Entomology

Alan Andersen has been tramping the far outback of western Queensland on a survey of ants and termites for mining company CRA. Meanwhile, back at home, work on the effect of fire regime on insect communities continues into the third year of data collection.

Grant Farrell is busy dealing with the not inconsiderable problems of sampling the stem boring larvae of the *Mimosa* moth, *Neurostrota*. Grant will be spending some time in Canberra and Brisbane following the forthcoming Aust. Ent. Soc. conference.

NT Health — Medical Entomology Branch

A new arrival to the Branch is Mr David Logan as Entomologist. David is from Brisbane, having recently completed work for his Masters on thrips. He will be responsible for the day to day activities of the Branch's biting insect monitoring and control operations.

Wendy Kelton has recently returned to service after extended leave and was welcomed back by a backlog of biting midge identifications.

Gwenda Hayes and Peter Whelan have been keeping the Branch turning over for the last three months while staff numbers were depleted. This included the field work and preparation of a major biting insect study at a proposed satellite town on the Gunn Point Peninsula.

The Ross River virus epidemic in the NT has now abated with over 300 cases from the Top End of the NT. The Branch has been very active in the media spreading the message of self protection and avoidance.

An interesting recent development has been the confirmation of the presence of the vector of scrub typhus in the NT.

Office of the Supervising Scientist — Alligator Rivers Region Research Institute

The Biological Monitoring section is awaiting with keen interest the final report of the RAC inquiry on mining in the Conservation Zone of Kakadu National Park. The section will soon have the assistance of a group of Conservation Trust volunteers to help with fieldwork for an experimental manipulation in a polluted creek, and with routine benthic invertebrate sampling in the South Alligator River.

Peter Dostine
Regional Councillor

VICTORIA

Museum of Victoria — Entomology Section

For the last three months, Ken Walker and Catriona McPhee have been literally off with the butterflies preparing an exhibition entitled "SKYDANCERS" — Butterflies of the World". The exhibition began with a flippant comment from Ken about staging such an exhibition. Unfortunately, the comment was made to the Museum's Director of Public Programmes who took it seriously and announced the opening date of the exhibition the following week. What began as a small butterfly exhibition grew into a monster involving the four major cultural institutions of Melbourne (Museum, Zoo, State Library, National Art Gallery). The opening was the last one for the remainder of the financial year, so a gala(h) evening was arranged with over 600 guests and became a night for Melbourne's Who's Who. And just to keep Ken on his toes, the Australian Entomological Society Annual Conference Organisers requested a delegates' viewing of the exhibition.

At the opening of the Museum of Victoria's butterfly extravanza. TV personality, Annette Allison, and curator, Ken Walker, on left, chat with David and Joyce Holmes, part of whose loaned collection is visible at the rear.

Special thanks must go to the Western Australian Museum for the inspiration of involving amateur collections in a major exhibition, to the Queensland and Australian Museums for specimens and advice and to Tony Hiller at the Mount Glorious Biological Centre for the loan of specimens. Reaction to the exhibition has been positive and has lead to an increase in average daily attendances. Comments have ranged from suggested "cruelty" for killing butterflies to people chanting "Praise the Lord".

Due to the demands of the exhibition combined with a reduction of staff in the department, most of the normal curatorial duties, including answering mail, were put on hold and Ken apologises for any delays incurred.

Institute of Plant Sciences — Burnley Campus

Janet Horne and her organising committee for the 22nd AGM and scientific conference are hard at work. Registrations are now beginning to flow in as it's less than a week until the close of registration. If you've forgotten to send in your registration form, abstract or cheque, please do so as soon as possible so that we can determine final numbers.

John Osmelak reports that larvae of *Spilosoma canescens*, the dark spotted tiger moth, were found attacking English elm, *Ulmus procera*, at Drysdale, Victoria, in December 1990. Larvae were collected 17.12.90, reared on elm leaves at 25$C+- 1$C. Pupation occurred from 25.1.91 to 29.1.91. Moths emerged from 10.2.91 to 19.2.91.

Kaye Hergstrom ("Cropwatch") is showing distinct signs of parasitism. Although Kaye and her partner Paul (an electrician) were shocked to discover evidence of endoparasitism, Kaye has not suffered greatly. The parasite is now prepupal and Kaye is eagerly awaiting its emergence as an ectoparasite. Kaye will be on maternity leave from 20th April.

David Williams has discovered the predatory mite *Anystis bascarum* feeding on the elm leafhopper *Ribantiana ulmi* in Kilmore and would appreciate any samples, reports etc from other areas.

Mali Malipatil and Kelvyn Dunn spent some time during April light-trapping in various crops between Mildura and Kyabram. They also took samples of the insect and arachnid fauna of the Hattah- Kulkyne National Park near Mildura.

Monash University, Department of Genetics and Developmental Biology

Steve McKechnie returned recently from a one month trip to the States where he attended the 32nd Annual *Drosophila* Research Conference. While in the States he spent a fortnight writing a paper with Bill Geer at Knox College. He also visited two *Heliothis* labs; Martin Taylor's at Princeton University and Dave Heckel's at Clemson University.

Ingrid Kovaks, an honours student of last year, began work as a research assistant funded by a joint ARC grant with Ary Hoffmann and Steve McKechnie. Part of her time is spent assembling quantitative geographic variation in *Heliothis* in La Trobe University and the rest of the time she is at Monash University developing molecular techniques to study *Heliothis*.

The lab. this year has two honours students working on insect related problems. One study is on *Heliothis* mitochondrial DNA variation, the other is on the GPO enzyme in *Drosophila*. Unfortunately, no graduate students are starting this year. Graduate students Alex Agrotis and Paul Matthew await final decisions on their theses while enjoying post doctoral positions at the Baker and Hall Institutes, respectively. Jenny Ross is close to completing her thesis and is looking forward to her *Drosophila* research at Vanderbitt.

Janet HORNE
Regional Councillor

SOUTH AUSTRALIA

South Australian Museum

Dennis Black from La Trobe Univesity looked through our desiccating funnel extracts in February to find some first records of sucking millipedes from South Australia.

Dr Mauro Daccordi of the Civic Museum of Verona (Italy) visited in late January to examine our holdings of Chrysomelinae.

Penelope Greenslade dropped in on 15 March to discuss insect conservation matters with Eric Matthews.

School of Biological Sciences, Flinders University

Congratulations to Caroline Gross for the award of her PhD! Neil Brink has a collection of about 80 different genetic stocks of *Drosophila melanogaster*. In addition he also keeps wild stocks of *D. hydei* and *D. simulans*. *Drosophila melanogaster* has also been collected from the wild to determine whether these strains harbour transposable P elements.

Zoology Department, Adelaide University

The Zoology Department is just beginning to regain its composure after the shock of losing Alice Wells from the staff to the Northern Territory Museum. We hope they appreciate the pearl that they have acquired. Entomology is now only being pursued by Shelley Barker and Derek Duckhouse. The former returned a month early from a rained-out study leave field trip to Mareeba. Very few buprestid specimens were collected but the hospitality of Ross Storey was greatly appreciated.

Crop Protection Department (Entomology Group) Waite Institute

In recent months the Department has seen several visitors and new arrivals. Professor Trevor Lewis, Acting Director of Arable Crops Research, Rothamsted Experimental Station, spent several days meeting people at the Waite in early February and gave a seminar on his long-held passion - thrips biology! Myron Zalucki from Queensland University spent a week with Derek Maelzer during March to analyse their *Helicoverpa* trap catch data. Several new students have joined Mike Keller's behaviour group. Mr Bill Frost has started a PhD project determining methods for selecting natural enemies for the biological control of sugarcane mealybug. Mr Neil Renfrey has commenced a part-time Masters Degree looking at specificity and host suitability of mealybug parasitoids. Ms Nicky Agelopoulou arrived from Greece in late March to start a PhD on the role of plants in the foraging behaviour of the parasitoid *Cotesia rubecula*.

Two new people have joined Peter Miles' laboratory. Ms Debbie Lorraine, a chemistry graduate from Adelaide University, started a PhD in February and will be examining the reaction mechanisms of oxidases and peroxidases in apid saliva, and Dr Yong Jiang arrived in March from Stuttgart University to take up a two-year postdoctoral fellowship, working on resistance mechanisms in lucerne plants to aphid attack. Peter has subsequently left the Department for a while to spend 8 months at the Institute for Plant Science, Lindau, Switzerland.

Phil Weinstein, having almost completed writing up his PhD on the biology of trigonalid wasps, has left the systematics lab. to take up a position as an epidemiologist with the SA Health Commission. Andy Austin, Paul Dangerfield and Frances FitzGibbon spent two weeks in the Strzelecki Desert during February and successfully hunted down the rare braconid subfamily Cercobarconinae. Frances returned with a new-found interest in pseudoscorpions!

Department of Agriculture

Nick Monzu paid a flying visit to provide an update on projects in WA. Peter Traverner has joined the entomology unit on a Wool Research Trust Fund Project to work on arthropod pests of legume pastures.

Andy AUSTIN
Regional Councillor

TASMANIA

Department of Primary Industry, Tasmania

John Ireson and Peter McQuillan have received their PhD's (see below). In June 1990 John released the moth *Dialectica scalariella* Zeller from Keith Turnbull Institute for control of Peterson's Curse which occurs at 150 sites in Tasmania. Moths have been found on their host 15km from release sites. The ragwort flea beetle *Longitarsus flavicornis* (Stevens) is giving excellent control of ragwort in the Huon Valley over 6 sq.km near Franklin. The Brittany biotype of the predatory snout mite *Neomolgus capillatus* (Kramer) is having significant impact on the collembolan pest lucerne flea at study sites. Margaret Williams is employing Robert Mensah as a casual technician while he awaits examination on his PhD thesis. Robert is helping with the quarantine control of codling moth for apple exports to Japan. The project is progressing well.

University of Tasmania

John Madden reports that 3 PhD and 2 MSc students have received their degrees. They were Dr Peter McQuillan (Biosystematics, ecology and control of pastoral cockchafers in Tasmania), Dr John Ireson (Studies on lucerne flea and other Collembola in Tasmania), Dr Sutohn Suwanbutr (Biology, ecology and control of lucerne aphids in south-east Tasmania), Mr Steve Candy (Biology of the mountain pinhole borer in Tasmania) and Ms Cao Yong (Integrated control of 2 spotted spider mite on hops).

Associated Pulp and Paper Mills

David deLittle hosted Dr Sininka Hahanimaki from the University of Turku, Finland during her post-doctoral fellowship study of leaf beetles. Dr Hahanimaki examined larval

survival of *Chrysophtharta bimaculata* and *C. agricola* on artificial *Eucalyptus* hybrids and found no strong differences to survival on natural species. She did find that *E. camaldulensis* and hybrids derived from it were highly attractive to the leaf beetle.

Lionel HILL
Regional Councillor

NEW SOUTH WALES
METROPOLITAN SYDNEY NEWS

Macquarie University, School of Biological Sciences

The School continues to be a hive of biological activity, but one of its most significant recent events has been the farewell to our resident CSIRO group, the Plant Physiology Unit, which has been associated with the School since the early 1970's and previously had a similar relationship with the Botany Department of the University of Sydney. It's ironic that this productive academic and research collaboration, cited as a model of the value of CSIRO- university cooperative effort, should be broken just as the first CRC's are announced. But CSIRO has gone, and university staff and postgrads are rearranging themselves to fill the empty benches. Filling the "footprints" of CSIRO apparatus will be a long and painful process - let's hope the School gets its own icemaking machine soon, to name just one basic example!

The aphid group, apart from moving house (to a bench in the basement and bench in one of the research labs), has undergone several changes. Eren Turak has temporary full-time employment at Rydalmere, with Murray Fletcher and Andrew Beattie. In his "spare time", he's progressing with his thesis. Jenny Harry, with her (non-aphid) PhD in her pocket, has gone to a post-doc in Manchester, where she will continue to unravel the molecular mysteries of reptile sex determination. Dianne Morris has sadly had to give up research because of medical problems. On the plus side, Max Moulds has commenced his MSc (on cicadas, you guessed it), Rita Holland has commenced an Honours project, following on from Jenny's preliminary work on developmental proteins in aphid sex determination, and Liz Holland (no relation) will take over Dianne's work on aphid mitochrondrial DNA.

Dinah Hales, juggling multiple roles as usual, seems to be spending most of her time on the basic maintenance of the cultures etc., in the absence of any technical staff, and had the foolhardiness to attempt to do an EXPERIMENT as well. (That's possibly why you haven't heard from her lately). Lilian Blanco is continuing to do large scale experiments on the effects of aphids on the physiology of their host plants. In fact the group's been operating at the limits of its space.

Andy Beattie and Duncan Veal have hired Dr Jin Yu as a Ciba- Geigy Research Fellow to analyse antibiotic secretions of ants. Andy has been appointed to Ros Kelly's Biodiversity Advisory Committee (BDAC) to devise a national biodiversity strategy. An Australian/US cooperative grant to study wasp pollination by sexual deceit in Australian orchids has been awarded to Andy Beattie, Rod Peakall and Steven Handel (Rutgers University, USA).

Dick Frankham and colleagues have found very low Ne/N ratios in large populations of *Drosophila* (0.05 and less), and this may apply to a wide range of species. They are testing untested theories and procedures for the genetic management of captive populations and endangered species. Dick has a new PhD student, Duncan Craven, working on Conservation Genetics.

In Mark Westoby's lab, a new "insect person", Ros Blanche, is beginning a PhD looking into the ecology and distribution of galling insects. Lou Rodgerson is presently excavating and sifting through nests of *Rhytidoponera metallica* in search of seeds and plastic seed mimics. Lesley Hughes has completed her PhD and remained in the lab to begin a Post doc investigating the effects of climate change on arid zone vegetation including indirect effects via insect herbivores. She is also becoming interested in the similarity of phasmatid eggs to elaiosome-bearing seeds and the role ants may play in removing and burying eggs. And what is Mark doing? He's very busy organising himself for the massive work load expected as a member of the Australian Research Council's Panel in Biological Sciences. Good luck to all you applicants out there!

Noel Tait, busy teaching this semester, has two new postgraduate students, Janine Miller (MSc) and Mandy Reid (PhD), working on Onychophora, and has seen several others complete their work. Of these, the most "entomological" was Clarice Kennedy, whose PhD on pseudoscorpions won praise from the examiners: she graduates in May. Completing a major work has not stopped Clarice, however. Now in her 80's, she has enrolled in a course in theology at Moore College, Sydney. We wish her all the best.

BCRI, NSW Agriculture & Fisheries, Rydalmere

BCRI is suffering from the Uncertain Future Blues. This is not something new and the scientific staff are learning to live with it. After several years of reviews and recommendations that the Institute be disbanded, relocated, dispersed or left alone (depending on the review), we stoically remain at Rydalmere continuing to deal with the entomological problems of NSW agriculture. The main external manifestation of the uncertain future is the number of vacancies that are being held unfilled for extended periods.

Max Casimir retired as Director of the Institute in February and Vic Edge has been Acting Director since. Vic's position as Director of Entomology has been temporarily filled by John Hamilton, who is himself retiring in May. When John retires, Andrew Beattie will be acting Director of Entomology for an indefinite period. Until the future of the Institute is determined (and there is no indication as to when that will be), both positions will be filled on an acting basis.

To add to our woes, the ebullient John Macdonald has been promoted to the position of Entomologist on the North Coast and has moved to Wollongbar. John will be working on the entomology of tropical fruit crops, particularly macadamias. John will be missed at BCRI but is still in regular contact with civilisation.

A number of vacant technical positions have been filled using temporary funds and Eren Turak and Angie Condello have taken advantage of this. Eren started in Taxonomy in November and is currently being shared with Andrew Beattie. Angie has shared her time between fieldwork with Murray Fletcher and illustrating for Graham Goodyer. Both Eren and Angie will be with us at least until the end of June.

Andrew Beattie has been dragging in the funding for his citrus projects. Ross Parkes and Melanie Scanes are employed on a $230,000 3-year project on petroleum oil sprays funded by HRDC/Caltex/Ampol. Tingkui Qin continues to be supported by an HRDC/Central Coast Citrus Marketing Board grant investigating the geographical origin of *Ceroplastes sinensis*. Andrew also has a 2-year $130,000 project (HRDC/NSW Horticultural Stock and Nurseries Act Ministerial Advisory Committee) investigating citrus leafminer and plans to introduce parasitoids from Thailand. This project has also funded a 4-week visit to BCRI by Ms Vacharee Somsook, Department of Agriculture, Thailand, who is investigating the use of nematodes for control of leafminer.

Another recent visitor to BCRI was Theirry Bourgoin, planthopper taxonomist from the Musée Nationale de Paris, who spent some time with Murray Fletcher and examining the BCRI collection. Murray has also been appointed Director of the Collections at BCRI, a nominal position held by John Walker, the curator of Herb-DAR at BCRI, until his retirement in November 1990. Needless to say, John's position has also been held vacant since then.

Army Malaria Research Unit

In February Joanne Clarke, a final year entomology student at the University of Sydney, began a project under the supervision of Tony Sweeney and Liz Brooke to study microsporidia in mosquitoes.

In March the unit conducted a survey for the sibling species of the potential malaria vector *Anopheles farauti* s.l. in northern Queensland. The first phase of the field study was based at Cowley Beach, south of Innisfail, and using an Army helicopter and four wheel drive vehicles mosquitoes in numerous localities between Townsville and Coen were collected. In the first three weeks of April a second phase of the study was conducted from a base at Horn Island, and using a helicopter most of the Torres Strait Islands were surveyed.

In April Tony Sweeney visited the USA to discuss recent collaborative studies with James Becnel and Carl Schreck of the USDA, Medical and Veterinary Entomology Research Laboratory, in Gainsville, Florida.

Recent visitors to the unit were Dr Dennis Shanks from AFRIMS, Bangkok, Thailand, and Dr Kevin Palmer, WHO, Kuala Lumpur, Malaysia.

University of Sydney — Department Plant Pathology & Agriculture

The year has started with a bang with twelve students enrolled in the senior course in Entomology. Six of these students are from Agriculture and will be doing projects with Harley Rose as part of their honours year.

Harley has been on a collecting trip for giant cockroaches to the Whitsunday Islands. Andrew Kotze, Jo Redfern, and Jim Woodward were all keen helpers on the trip.

Fred McDonald went on a short collecting trip to the Snowy Mountains and up the coast looking for pentatomids. The collecting was patchy due to the very dry year.

Sydney University — Medical Entomology at Westmead Hospital

In March Richard Russell attended the annual conference of the American Mosquito Control Association in New Orleans and presented a paper on the NSW arbovirus surveillance programme.

The Arbovirus program this year has seen relatively low numbers of mosquitoes collected throughout the state. Although many catches were low, there was significant virus activity, most notably a number of isolates of Kunjin virus from inland localities and increased activity of Ross River virus from inland localities and increased activity of Ross River virus along the NSW south coast. Public health warnings and Health Department press releases warning the populations of local communities to take protective measures against mosquitoes followed these isolations. John and Peter are now in the last stage of counting and processing the remaining catches of mosquitoes for this year. Merilyn Geary has completed the laborious series of dissections of some vectors of dog heartworm with gratifying results fortunately; she is currently amidst thousands of human sera in our quest to reveal levels of prevalence of human infection with this dog parasite in various areas.

Stephen Doggett has isolated more spirochaete-like organisms from ticks collected form the eastern coast of NSW.

Richard Russell received funding from the ABRS for taxonomic studies of Australian biting midges (Ceratopogonidae) and Dr Margaret Debenham has happily emerged from entomological 'retirement' to join the Unit and undertake this onerous but productive task. We welcome her back to the 'game'.

Westmead Hospital held an open day in March at which our Unit was invited to participate. Various live displays prompted many questions and stories from the numerous visitors that filed past.

Tim MacNanus, a veterinarian from the Department of Primary Industries, Tasmania, and with an active interest in arboviruses in that State, visited our Unit for a week in April with a swag of local mozzies for experience in mosquito identification and virus isolation. Bert Cook, a veterinarian from New Zealand, with interests in vector-borne disease and natural history, also visited in April and assisted Stephen with field work on the south coast.

University of New South Wales — CERIT

Jenny Anderson is still commuting regularly to Fowlers Gap Arid Zone Research Station for her blowfly work and was last seen leaving CERIT with 20,000 blowies for a mark/release/recapture experiment to be undertaken with PhD student Lynette McLeod. Lynette visited the CSIRO Entomology blowfly/genetics group in Canberra for a week in January and also spend a week on Flinders Island helping with the Sterile Release Programme.

Chris Orton and Jenny attended a sheep ectoparasite conference in Melbourne, organised by Hoechst Australia, Jenny giving two papers. Julie-ann Short left to have a baby. Congratulations Julie- ann and hello Stephanie. Martin Shivas is in the process of writing the final report of the blowfly genetics of resistance project and Julie-ann's blowfly culturing skills are being sorely missed.

Visitors included Dr Marianne Horak and Catherine Gilbert from CSIRO Entomology (Canberra) who came to discuss culturing and testing of fabric pests; Yvette Larsen from Taronga Park Zoo who came to discuss housefly culturing methodology; and Robin Gunning from NSW Ag. and Fisheries (Tamworth) who came to discuss insecticide biochemical assays with Chris Virgona. Other visitors included Lyn Annabel and Tim Tribe of Yates; Bob Ryan, Product Development Manager, CIG; Ron Oatfield, Director Technology Development (USA), and Paul Hughes from Zoecon; Richard Reira from Excelpet; and Sue McLeod, Sandra Hodgson and Clare Dellaglacoma from Samuel Taylor.

NSW Forestry Commission, Pennant Hills

A workshop on the biological control of *Sirex* woodwasp was held on April 24 and 24 at Bathurst and attracted participants from all eastern states. It was organised by Bob Eldridge and David Spolc.On March 26, scientists from the Australian Museum were invited to the Forestry Commission Wood Technology and Forest Research Division, Pennant Hills to discuss current research and possible future joint projects. Researchers from Forestry gave 15- minute summary talks of their current research, involving projects in forest ecology, burning regimes, wildlife ecology, plantation management, hydrology, soils, forest entomology and forest pathology. Of interest to entomologists, Christine Stone spoke on her involvement with the Murray River Red Gum project, Alan York on the effects of forest management on terrestrial invertebrates, Bob Eldridge on *Glyptotermes* ter-

mites, and Deborah Kent on the life history of ambrosia beetles and how they affect wood quality. There was also a demonstration of how veneer is cut from eucalyptus logs. Here it was possible to see first-hand the staining caused by ambrosia beetles. A barbecue luncheon added to a memorable visit. Since there was not enough time for Australian Museum scientists to present their talks, a second session is planned for June at the Museum.

Australian Museum, Sydney

Max Moulds has been appointed Collection Manager of Entomology-Arachnology at the Australian Museum, and was shortly thereafter made Scientific Officer. He is busy these days curating the collection, especially dealing with large backlogs of labelling and sorting. If this isn't enough, he is pursuing with his now greatly diminished spare time a MSc on cicada taxonomy at Macquarie University.

Shane McEvey has been awarded an Australian Museum Visiting Fellowship to set up a pilot GIS (Geographical Information System) based on the distribution of Drosophilidae in the Sydney Basin. He is using the ERMS programme developed by the NSW NPWS and will have National Parks involvement. When he is not at the Museum, he has been in the field collecting drosophilids with his strange banana mixture which produces a wonderful vinegar.

Gerry Cassis is continuing work with the Dermaptera and curating the Museum's Hemiptera collection. Dan Bickel will be attending the XIX Pacific Science Congress in Honolulu to present a paper at a symposium on Pacific Basin Diptera, and to further explore the riches of the Bishop Museum collection. David McAlpine is back working on the fly family Platystomatidae.

Visitors included Joe Friend from UNE, Armidale, Research Associate Geoff Williams from Lansdowne to identify rainforest insects, Clare Baltazar from University of the Philippines to study butterflies, John Stockard from Wingham on moths, Ian Common from Toowoomba on miroleps, and Ebbe Nielsen from ANIC on databases.

Merilyn GEARY and Dan BICKEL
Regional Councillors

NSW COUNTRY NEWS

Agricultural Research Centre, Tamworth

John Hosking has had some visitors from Peru, looking at feasibility of establishing a Cochineal industry for South America. They would rather establish this industry in Australia because Peru is too politically unstable!

Robin Gunning is still up to her ears in insects collected from Ben Halls Gap State Forest, a project funded by an AES research grant. Robin reports she is finding a number of alpine species.

Agricultural and Veterinary Research Centre, Orange

Recent visitors to the Centre include Dr David Judge, Uniroyal Chemical International Product Development Manager from the USA. David, with Ian Hore, Uniroyal's Australian Manager, discussed the complexities of apple pest management with Col Bower and Graham Thwaite.

Yanco Agricultural Institute

Jeffrey Aldrich, visiting scientist from USDA in Beltsville, Maryland, spent a week at Yanco in early April. Jeff and David James ran a few bioassays with some recently obtained synthetic samples of spined citrus bug attractant pheromone. Jeff and David have been collaborating in research to develop an attractant for spined citrus bug based on synthetic pheromone since 1989.

The Murrumbidgee Farm Fair was held at the Institute in late April attracting a large number of people over 2 days. The entomology display which highlighted current research on Integrated Pest management was a very popular exhibit. A large number of living natural enemies were collected for the occasion and formed a veritable zoo! Most popular exhibit was a very large whistling spider, (*Selenocosmia sterlingi*) christened "Elvira". Very handy if you want to clear the garden of frogs and lizards.

The Australian Citrus Growers Federation held their annual conference in Leeton during April and David James spoke to them about research at Yanco on citrus pests.

Michael Ryan who is working with Gimme Walter at the University of Queensland, visited Yanco for a few days in April to collect Green Vegetable bugs (GVB) which are apparently scarce in Queensland this season. In contrast, GVB appear to be fairly common this year in southern NSW and Michael was able to collect about 800 from a single Soybean paddock!

Agricultural Institute, Wollongbar

John McDonald has recently left BCRI Rydalmere and joined the dynamic, superkeen, environmentally friendly North Coast team at Wollongbar! He joins Neil Treverrow, moving into more spacious and gracious surroundings at the Pearce's Creek station (3 km from WAI).

Agricultural Research Station, Narrabri

The following overseas visitors called in on researchers at the Narrabri Research Station over the past few months for discussion on cotton pests etc.: F.D. Judge (Product Development Manager, Crop Protection, R&D Uniroyal, Connecticut), Michael Braud (General Manager, IRCT, Montpellier), Guy Mahdavi (Technical Director, CFDT, Paris), V.P. Chanrai (Managing Director, Afcott Cotton, Nigeria), Walter Veigener (Director, La Nueva Esperanza, Argentina), Paul Scheltes (Duphar, Netherlands).

The Cotton Research & Development Corporation opened its new offices in Narrabri in April. It is the first of the new R&D Corporations to establish their headquarters outside of Canberra.

Jealott's Hill ecologist Richard Brown visited fellow researcher John Cole in March to discuss the progress of the ICI environmental study on the chitin inhibitor chlorfluazuron being conducted on Auscott Midkin at Moree.

The Shadow Minister for Science (Peter McGauran) visited the Narrabri Research Station in April along with the local federal member (John Anderson) to discuss research projects, funding problems etc.

The proposed USDA/IOPERM India Cotton Pests Resistance meeting had to be postponed from February because of the Gulf crisis. It is now intended to hold the meeting in New Delhi/Hyderabad in early October, 1991. IOPERM delegates include Graham Matthews (Imperial College, UK), John Thomas & Ray Frisbie (Texas A&M), Bernie Smale (US EPA, Washington), Claude Le Rumeur (Roussell Uclaf, France) and Neil Forrester (NSW Agriculture & Fisheries).

The UK based consultants John Wallace (Arbour International) and Thelma Nunez-McNally (Gibb Environmental Sciences) visited Narrabri Research Station in March as part of the Cotton Foundation funded environmental audit of the Australian cotton industry.

A meeting on Resistance Management of cotton insects was convened by Madame Zhang of ICAMA in Beijing in March. IOPERM delegates included Keith Alcock (ICI, UK formerly of Melbourne) and Claude Le Rumeur (Roussell Uclaf, France). Discussions centred on the development of an Insecticide Resistance Management Strategy for aphids and *Heliothis armigera*, particularly for the badly affected Shandong province.

CSIRO Division of Entomology, Narrabri

Over March 19 and 20 the Entomology group, as part of the Cotton Research Unit, was involved in a visit to Narrabri by the Division of Plant Industry Divisional advisory Committee. This involved a series of presentations, meetings with growers and other industry organisations. Also a good excuse for some slap-up barbecues and dinners.

The CSIRO Cotton Research Unit, together with NSW Agriculture and Fisheries staff at Narrabri, has also been involved in the early development of a full-length documentary on the cotton industry and the general question of pesticide use. The film will be made by the CSIRO Film and Video Unit. Producer Edwin Hill visited the Research Station and district for the week from April 8-12 collecting material to develop a story proposal.

Intrepid Chris Jones will soon leave Narrabri (April 29) for his annual winter stint based at Charleville as part of the Inland *Heliothis* research program. Chris has spent the summer at Narrabri measuring pyrethroid resistance levels in adult *H. armigera* for Joanne Daly. He will overwinter in the inland where he will conduct surveys of *Heliothis* adults and larvae, record pyrethroid resistance levels and map vegetation quality over much of western Queensland until late September when he returns to the north- western haven that is Narrabri. After a busy period of visits, program reviews, preparing grant proposals and other administrative tasks Gary Fitt went on an inland *Heliothis* trip (April 19-28) to Birdsville and beyond to recover.

David JAMES
Regional Councillor

WESTERN AUSTRALIA

Curtin University

Jonathan Majer has recently returned from Kwa Zulu, a homeland in South Africa, where he has been evaluating the success of sand mine rehabilitation by using ants as bio-indicators. He, and South African entomologist Anneke de Kock, found 70 species of ants, some of which had not previously been collected further south than Zaire. The pattern and rate of return of ants in the rehabilitation is similar to that observed in North Stradbroke Island sand mines, which is not surprising as both locations are on the same latitude.

Tony Postle has also been frequenting minesites, having just been on one of his trips to the Argyle diamond mines.

Honours student, Anne Scougall, has recently commenced a project on remnants of *Eucalyptus* woodland in the WA Wheatbelt. Anne is looking at the importance of fencing such areas on soils, vegetation, the soil-dwelling ant fauna and also interaction of ants with seeds in the fenced and unfenced remnants. It is anticipated that her study will provide some hard data on the importance of fencing small remnants of native vegetation.

Murdoch University

Dr Myron Anderson, from Gustavus Adolphus College, St Peter, Minnesota, is visiting the School of Biological and Environmental Sciences. Mike's (as he is informally known) research interests encompass the Odonata, teacher education and more recently studies on the microfauna of freshwater lakes and streams. The entomological knowledge of students at Murdoch has greatly increased during Mike's visit because he has run a course on entomology during the first semester.

Keely George, an honours student in Environmental Science, has found *Coquillettidia linealis* larvae in the fringing vegetation surrounding Thomsons Lake, Perth. It is thought to be the first time that this larva has been found in WA. This knowledge will aid in future mosquito control in freshwater wetlands.

Sare Latchford has started on a project to determine the environmental impact of physical methods of mosquito control on saltmarshes. Much of her work will concentrate on the Mandurah region, south of Perth. Lorna Charlton has just commenced a PhD on the Odonata of the Millstream region in north western WA. Lorna is particularly concerned with determining the habitat requirements of larval odonates and the impact of exotic plants, including the Indian Water-fern, Date Palms and Cotton Palms

Kerry Trayler is continuing her work on the effects of Sumilarv, a juvenile hormone analogue and potential midge control agent, on the non-target organisms in the Perth wetlands. Jenny Davis has just returned from a conference on "Arid Zone Water: A Finite Resource" in Alice Springs where she presented a paper on the unique aquatic invertebrate communities of the Central Ranges.

University of WA

Studies of insect (tettigoniid) mating systems have now moved into full gear with the addition of Dr Leigh Simmons (QEII Research Fellow) from Liverpool and Dr Todd Shelly (ARC Research Fellow) from UCLA. Both arrived during last year and have already demonstrated just how productive King's Park is as a resource for insect natural history. Last January there was a meeting of tettigoniid minds east of Albany with David Rentz from ANIC, Nina Wadell from Sweden, Todd, Leigh and Win Bailey with an un-named band of helpers. They collected 25 species from as many hectares, which in terms of species diversity ranks equal, if not better than many neotropical rainforests. This was sclerophyll heath against the southern ocean. Dr Ron Aiken from the Mt Allison University, New Brunswick, will join the mating team for about 9 months (the insect mating system study team that is ... the mind boggles!) and an almost annual migration south by Dr Darryl Gwynne form Erindale/Toronto. Darryl and Leigh should be congratulated on their recent high profile paper in Nature, which not only put a tettigoniid on the front cover, but also scooped the same picture as "Miss October" on the Nature Calender.

WA Museum

Terry Houston concluded field studies of *Verticordia nitens* pollination by a species of solitary native bee in January and commenced a trial programme of trap-nesting. This involves the deployment of small pieces of pinewood drilled with holes of several diameters in areas of natural bushland. Various wasps and bees utilise the holes for nest sites. The technique can provide samples of all life-stages, larval provisions, nesting materials and data on phenology. A particular hope with the programme is to learn something of the biol-

ogy of the rare endemic bee *Hylaeus globuliferus*, whose males have extraordinary glandular antennal scapes and large cavities in the frons.

CSIRO

Gordon Berg of the Victorian Department spent a few days in Perth discussing his new red-legged earth mite programme with James Ridsdill-Smith and Amanda Annells at CSIRO and Phil Michael and Dennis Gillespie at the WA Dept of Agriculture.

James spent two weeks in February visiting colleagues in New Zealand working on plant resistance to pasture pests. He was pleased to catch up with people from his scarab days. Red-legged earth mites are a pest of asparagus in New Zealand, but not important on pastures.

John Van SCHAGEN
Regional Councillor

AUSTRALIAN CAPITAL TERRITORY

CSIRO Division of Entomology

The stored grain lab hosted the Grain Industry Pest Control Conference in March. The objective was to consider future trends in pest control in the industry, and it was well attended by members of the Australian Wheat Board, the bulk handling authorities, state departments and others. Chris Whittle has joined the stored grain group to work on the interaction between phosphine and the commodity. Peter Annis went to Newcastle Terminal for some initial work on dust suppression. Peter and Jan van Graver went to the ACIAR Post Harvest Program Project Leaders meeting in Sydney, where they spoke about their new project on storage of stored products outdoors in bag stacks in the tropics. David Rees, a storage entomologist from the Natural Resources Institute in the UK visited the lab and spoke about his work on biological control of the larger grain borer in Mexico and Africa.

Max Whitten went to Rome in March for a meeting on the FAO review of the rice integrated pest management program in south and south-east Asia. While in Europe, he visited the biological control of weeds group at Montpelier. Max was Australia's delegate at the Tripartite Meeting on the potential impact of climate changes on pests, pathogens, parasites and diseases, held in Canberra. The delegate from New Zealand was Dr Rod East, and from the UK, Dr Trevor Lewis. Other entomologists involved in the meeting were Roger Farrow, Bob Sutherst and Paul Wellings.

John Curran recently spent 2 weeks visiting research stations in China with an ACIAR project on the use of nematodes for control of pests, particularly the Chinese codling moth, *Carposina*. The objective was to coordinate the planned large scale field trials to be undertaken by the Guangdong Entomological Institute and Biological Laboratory in Beijing.

Paul Wellings has returned to Tonga for a brief follow up on the establishment of the parasites released last year against the banana aphid. Keith Wardhaugh has gone to Spain for more collections of dung beetles.

Peter Atkinson of the molecular biology group, will be doing a short project on the feasibility of freezing screwworm fly embryos, funded by DPIE and the AMLRDC. The aim is to be able to stockpile embryos instead of having to maintain continuous cultures of the insects.

Joanne Daly is back to the lab after her maternity leave, just in time for Jenny Fisk to go off on hers.

Ernest Delfosse has accepted the position of Director of the new USDA Biological Control Institute in Washington DC and leaves at the end of April. At this stage we expect him to hold the position for 2-3 years and then return to the weeds group in Canberra. All the best Del!

Tony Wapshere has just returned from his second trip to Chile and Argentina in search of biological control agents for bathurst burr and blue heliotrope. Tony found about 20 species on bathurst burr in Argentina but only 4 in Chile, which is surprising as Chile was thought to be the country of origin. No additional agents were found for blue heliotrope.

Chris Sanders has come to the end of his eight month visit to the pheromone group. He made good progress on the work on mechanisms for mating disruption in oriental fruit moth and has lots of ideas for more work. Perhaps we'll see Chris back soon.

Bureau of Rural Resources

Matt Cahill reports that he's becoming an expert on CLIMEX, the climate-matching program developed by Gunther Maywald and Bob Sutherst, CSIRO Indooroopilly. Matt is interested because there have been a few rejections of shipments of cucurbits by NZ due to the presence of a tropical muscid pest, *Atherigona orientalis*. CLIMEX is being

used to estimate the likelihood of establishment of *A. orientalis* in NZ should it slip through the quarantine barrier.

Australian Plague Locust Commission

Life has returned to normal after an external review in March. Flood rains in western Queensland have resulted in a major outbreak of locusts. Libby Bie and Peter Spurgin are in charge of the campaign to control the locusts before they migrate, with good results to date.

Jane WRIGHT
Regional Councillor

ANIC and ANU

After several optimistic "completion" dates, the Australian National University entomologists have moved from their temporary residence in the ANIC to their renovated premises in the Division of Botany and Zoology. Chris Reid retains space in both buildings as his current ABRS funding draws to a close and an ERIN (Barry Richardson's Environmental Resources Information Network) databasing project on ANIC beetles may eventuate. Honours student Alison Roach, also commuting between the two buildings, is developing a fine technique for pulling the genitalia out of minute dermestid beetles. Ting Kui Qin is scrutinising the first output from his phylogenetic analyses of *Ceroplastes* and relatives, and is well pleased with the provisional placement of the Chinese wax scale *C. sinensis*. All will be revealed at the A.E.S. meeting. Last quarter's report, through an unfortunate typo, implied that Ting Kui and John Trueman were working on molecular approaches, when in fact their enthusiasm was **waning**. Actually John Trueman is back to using morphology and is grappling with wing vein homology in his odonates. John Trueman, Pete Cranston and Nick Drayson will try to establish their credentials as entomo-limnologists by attending the upcoming Australian Society of Limnologists meeting at which Nick will report on progress in his MSc study of *Cricotopus* midges.

Ebbe tells me that the ANIC Lepidoptera Unit has been very busy, with visitors including Professor Clare R. Baltazar and Ms Eden Gregorio (University of the Philippines at Los Banos), who are cataloguing the Phillippine butterflies, Dr Naomi Pierce (now of the Museum of Comparative Zoology, Harvard) and her student retinue examining *Jalmenus*, Tosio Kumata (University of Sapporo, Japan) working with Gracillariidae, Ian Common continuing oecophorid studies and John Dugdale (whose N.Z. organizational acronym probably will have have changed more than once by the time this is published) looked at our collections of Incurvarioidea, tortricids and hepialids. The latter three visitors were intended participants in the Lower Lepidoptera Workshop which was cancelled because of the Gulf War. John Dugdale, a long suffering head of taxonomy in DSIR Plant Protection, spoke to us of the vagaries and perversity of science politics in New Zealand - I hope none of our CSIRO Institute (Plant Production and Processing) personnel were present to learn novel means to reduce taxonomic research resources.

Ebbe Nielsen has been elected a Fellow of the International Faculty of the Danish Research Academy and has formally taken up the Chairmanship of the Lepidoptera Specialist Group under the ICZN's Species Survival Commission following in Tim New's shoes. Ebbe has joined the Editorial Board of a new Chapman and Hall journal, topically entitled Biodiversity and Conservation. The profile of invertebrate conservation is increasing and Alan Yen and Rhonda Butcher (Museum of Victoria) came up to Canberra to consult with Ebbe amongst others on their project. Our section, with ERIN support, seems likely to extend its insect databasing activities following the pilot work on the Queensland wet tropics (for which CRES have still not provided BIOCLIM profiles or maps).

Assistance with the organisation of a symposium on Australia's Biota and the National Interest: the Role of Biological Collections has been another of Ebbe's activities. This talkfest will take place on 11-12th November of this year, in Canberra, under the auspices of the Australian Academy of Science and the Australian Institute of Biology. Ebbe's enthusiastic espousal of the role of insect taxonomy in all these current bio-political arenas has drawn international attention, including from the Natural History Museum in London, with a visit last year from the Deputy Director (Research) John Peake, and now the reforming Director Neil Chalmers is to seek advice when Ebbe returns from his current overseas trip to USA and UK.

Other members of the Lepidoptera Unit have been in the field, with Marianne Horak joining Ian Naumann and Peter McQuillan forming the March team in Tasmania. Field activity and lab sorting were featured on an ABC TV report. Ted Edwards and Jo Berry formed the next cohort of Tas-

mania insect collectors in a very wet April. Marianne Horak was then joined by Murray Upton in a wet season surveillance of pest moths around Darwin. Continued wet conditions into mid-April didn't prevent them from visiting plenty of sites in Lichfield National Park and making an excellent collection.

Such activity isn't restricted to the lepidopterists according to Bruce Halliday, whose mite lab has been boosted by the year-long visit of Jurgen Otto from the University of Bremen, Germany. Jurgen, while studying the biosystematics of Ancystidae mites, is concentrating on a species CSIRO introduced from France to Western Australia to control the dreaded Red-legged Earth Mite. Kathleen Strong, recently departed from the Division for a sojourn in Hawaii, has been involved in extensive discussions on potential Psoroptes mite systematics projects. Given half a chance, Katie will return to one of these projects and we look forward to her keeping the "Coopers and Cladists" discussion group on their toes regarding molecular systematics. Bruce and Penny Greenslade have entertained Peter Serov, a student in the craft of mite identification, who is being trained on Heard Island mites and may graduate to Antarctic mites as an MSc project at Macquarie (the university, not the island). Penny is also working with fellow collembolan taxonomist Professor R. Yoshii (Kyoto University) on the typically rainforest dwelling family Paronellidae, and with Rieks van Klinken, recently returned from Macquarie (the island ..) with lots of real and near insects and much valuable biological information.

Other ANIC units seem quiet by comparison. John Balderson retired recently after a career of valued assistance to Ken Key and latterly David Rentz. Renate Sadler will devote some of her time to assist in the maintenance of Dave's orthopteran cultures. Dave had a successful trip to Western Australia with Nina Weddell (Stockholm), linking up with Win Bailey, and returning with much live material. Nina is continuing her tettigoniid behaviourial studies in Melbourne.

The hymenopterists have transmogrified into a publishing house, with Ian Naumann proofreading that book and console-bound Jo Cardale indexing. Jo Berry, freshly revived by that Tasmanian rain, is scouring the local bush for pteromalids or their potential hosts.

The indefatigable Gunther Theischinger and Dan Bickel visited the Dipterists, raiding tipulids and dolichopodids respectively. Matt Cahill (AQIS) and Paul Ferrar (ACIAR) have paid several visits in connection with shoot-fly (*Atherigona orientalis*), particularly larval morphology in relation to diet. Charles Clarke came down from Armidale to identify the immature (and many reared) flies that he found in *Nepenthes* pitcher plants in Brunei (Borneo). His PhD supervisor, Roger Kitching, dropped in to inspect progress on the family level sorting of his Lamington canopy-fogged Diptera. Sandra MacDougall rapidly surpassed Peter Cranston's abilities to identify acalyptrates and completed the sorting in quick time. Sandra has obtained postgraduate scholarships, including a Fulbright, and is leaving soon to study agricultural sustainability in California.

John Lawrence is enthusing about the new INTKEY, which allows the incorporation of illustrations (colour too) into his interactive keys to beetles. The development has involved Mike Dallwitz and Toni Paine from the computing area and Anne Hastings, who is organising the scanning in of the figures and more. John will take what he calls a "draft prototype" of the interactive larval key to the Coleoptera larva workshop in Honolulu in the first week of June.

Pete CRANSTON
Regional Councillor

QUEENSLAND

SOUTH EAST QUEENSLAND

Health Department

Pipi Mottram and Alan Dick (Health Inspector) were in central Qld from 25 Feb to 16 March assisting 3 local authorities in a salt marsh mosquito control program. House to house surveys were also undertaken for *Ae. aegypti* in 12 coastal towns in the region.

Queensland Forestry Service

Chris Fitzgerald attended a workshop on monitoring *Sirex* wood wasp run by the NSW Forestry Commission held at the Charles Sturt University, Bathurst on the 23 and 24 April. This involved some stomach turning trips in the Forestry helicopter but Chris assures us he took it in his stride.

Ross Wylie was entomological consultant to Lone Pine Koala Sanctuary which has been having problems with insect defoliators in their *Eucalyptus* plantations. Ross has also been involved over the past 6 months in restoring the

"Tree of Knowledge" at Barcaldine in time for the Labor party centenary celebrations there in May.

Ross Wiley, Brenton Peters and Jack Kennedy have finished summer field work with subterranean termites and returned to surveys at Maryborough for West Indian drywood termite (*Cryptotermes brevis*). At present 8 infested houses in Maryborough and Brisbane are known to require fumigation to eradicate this exotic pest.

Queensland Institute of Medical Research

Brian Kay is spending 1 month in Fortaleza, Brazil overseeing the release of the copepod *Megocyclops* into water containers for the control of *Ae. aegypti*, the vector of dengue fever.

Michael Brown is involved in *Megacyclops* release for control of *Ae. notoscriptus* at Amity Point on Stradbroke Island in conjunction with the Redlands Shire Council.

University of Queensland

In view of Professor Paterson's retirement at the end of the year the Department was subjected to an internal review by the University of Queensland. As a consequence the Chair of Entomology is shortly to be advertised.

Joan Bryan visited Vanuatu from the 10 March to the 8 April as WHO consultant on malaria control using mosquito bednets impregnated with permethrin. Joan visited 5 islands during the trip and reportedly ate enough taro to last a lifetime!.

Paul Walker is visiting the Department between 24 April to 3 May before leaving for Bundaberg where he will be working for 5 months with Peter Allsopp on a BSES funded project on margarodids infesting sugar cane.

MSc's awarded in the Department include those by Judy Grimshaw for her revision of the Oxyopidae (Arachnida), Brian Montgomery for his work on genetic studies of Sheep blowfly and Brad Scholz for his work on biological control of *Heliothis* by *Trichogramma*. Dick Drew's DSc was accepted on the 6 March for his studies on Tropical Fruit flies. Daf Kaonga is returning to Zambia and David Logan is leaving for Darwin, both after submitting the thesis component of their MAgrSt.

CSIRO, Long Pocket

Tony Wright goes to Malaysia and Thailand in April for 2 weeks to take the biological control agent for water hyacinth, *Neochetina bruchi*, to both countries.

Mick Julien will travel to Thailand and Vietnam in May to survey for insects attacking *Clerodendrum philippum*, a weed in the SW Pacific. He will be busy setting up a new ANPWS/CSIRO project on control of *Salvinia* in Kakadu National Park.

Ken Harley and Bob Sutherst will be in Harare, Zimbabwe, in June to attend a workshop on the control of Africa's floating aquatic weeds.

Don Sands, Gus McQueen, new staff member Jamie Seymour and Fred Dori from PNG travelled to Rockhampton in April to discuss with growers the problems caused by the fruit piercing moth in orchards.

Centre for Tropical Pest Management

One of the planks in the election platform of the successful Labor Government at the last federal election was a planned setting up (and liberal funding!) of a series of "centres of excellence" in Australian science. Their name evolved into CRC's (Co-operative Research Centres) after the election but the financial promise remained and a great number of highly competitive proposals were put forward by multi-disciplinary groups in many areas of science around Australia. The lucky winner in the entomology field was a joint proposal put up by the Long Pocket Laboratory of CSIRO Division of Entomology, the University of Queensland's Department of Entomology, the Queensland Department of Primary Industries Entomology Branch and the Lands Department's Alan Fletcher Research Station. The theme of the centre is encapsulated in its title which will be *The Centre for Tropical Pest Management*. Its establishment recognises the unique spread of talent which exists in Brisbane in pest management and biological control. The lucky recipients are presently numb with delight after a tough battle but, when they get their act together, we can look forward to the centre being extremely influential in its field throughout Australia and its Pacific neighbours.

DPI Entomology Branch

Branch members mourn the death of Ken Houston, who was loved by all. An obituary appears elsewhere in this "Myrmecia".

Dick Drew (Indooroopilly) was recently awarded a DSc by the University of Queensland. The degree was awarded on the basis of Dick's "original and important contribution to

scientific knowledge" and was in recognition of his achievements as a fruit fly specialist of international repute. Dick has published over 50 papers in a wide range of journals on the taxonomy, ecology and biology of dacine fruit flies, culminating in a monumental monograph of 500 pages on the taxonomy of tropical fruit flies published in 1989. In that year Dick was elected a fellow of the Linnean Society of London and last year was awarded our Society's Ian Mackerras Medal.

As with the rest of the QDPI the Branch is going through a process of 'downsizing'. Apart from the redundancies which have been offered (final details next issue), two of our top managers, Ian Galloway and Peter Twine have recently transferred to management positions in other areas - Ian to the Lands Department and Peter to the Bureau of Sugar Experiment Stations. As a result Bernie Franzmann (Toowoomba) has been appointed Branch Regional Manager (Acting) for Southern Queensland.

On her latest NAQS trip to Torres Strait, Judy Grimshaw (Indooroopilly) found the spiralling white fly (it lays eggs in a spiral pattern under leaves) *Aleurodicus dispersus* established in Australia on Boigu Island. It promises to be a serious pest of a wide range of crops, including bananas and pawpaw. It is well established in Papua New Guinea.

John Turner (Indooroopilly) is putting together a video on stored product pests to be used to teach quarantine inspectors what to look for in imports and export.

Elaine Brough (Indooroopilly) has been trialling a questionnaire on the Darling Downs which seeks information on community opinion and knowledge pathways regarding pest management in cotton.

Greg Daglish (ACIAR, Indooroopilly) and Barry Ingram (Biloela) attended the Australian Mungbean Conference in Brisbane during March and presented papers on pests in storage and in the field. Greg and Graham White (Indooroopilly) were invited to address the Australian Mungbean Association on control of bruchids - *Callosbruchus maculatus* and *C. phaseoli* are becoming major problems in stored beans.

Merv Bengston and Graham White attended an Australian Wheat Board-CSIRO grain industry pest control conference on 14-15 March at CSIRO Division of Entomology, Canberra.

The fruit fly group at Indooroopilly will jointly host a new PhD student at UQ. Vijaysegaran, from Mardi in Malaysia has been cooperating with the group in an ACIAR funded study in Malaysia.

Dick Drew, Bruce Sabine and Dave Hancock will be off to Thailand in May looking at fruit flies as part of the ACIAR project.

Marlene Elson-Harris (Indooroopilly) deserted her fruit fly larvae at the end of April for a few days consultancy at a training workshop on biting midges for health inspectors. The workshop was organised by the Australian Institute of Environmental Health and the National Biting Midge Research Organisation.

Pat Collins (Indooroopilly) and John Hargreaves (Redlands) have been active participants in updating the 3V strategy for pesticide use to control cabbage moth on brassica crops in the Fassifern, Lockyer, and Brisbane Valleys. New elements of the strategy will be a summer period in which no brassicas should be grown and increased emphasis on *Bacillus thuringiensis*.

Geoff Waite and Roger Broadley (Nambour) have produced a video demonstrating the use of predatory mites as part of IPM on strawberries.

Rod Elder (Rockhampton) is releasing *Comperiella lemniscata* for control of Oriental scale on pawpaw. Two strains are being released: one from Torres Strait collected by QDPI Horticulture staff and another from China collected by Dan Smith.

Richard K. Morrison from Texas A&M University visited Brad Scholz in Toowoomba from 16-22 March. Richard has had over 20 years experience rearing *Trichogramma* and *Sitotroga cerealella*. He examined Toowoomba's mass rearing facility and made suggestions for improvement. Brad leaves on the 6 May on his Churchill fellowship trip - news next issue.

Peter Cameron, DSIR Auckland, New Zealand, visited the Toowoomba lab on 20 March to discuss aspects of *Heliothis* management with David Murray. Peter has recently supplied QDPI with a shipment of the *Heliothis* larval parasitoid *Cotesia kazak*, which has been established in New Zealand. Peter also visited Iain Kay in Bundaberg to discuss tomato problems and the activities of consultants in the crop.

Les Robertson (Emerald) reports an interesting interaction between an exotic weed, native insects and crop production. The exotic weed *Parthenium hysterophorus* is proving to be more than just a serious pest of grazing land in

Central Queensland, it is also a good host for at least two native beetles which also attack sunflower crops on the Central Highlands. The black sunflower scarab, *Pseudoheteronyx* sp. has developed into a major pest on the Highlands over the past three years. High numbers and widespread damage to sunflower crops is closely associated with infestations of parthenium, on which adult beetles feed. The beetles move from parthenium-infested grazing land, roadsides and contour banks into sunflower crops during the summer, completely defoliating the crops in some instances. Some 20 000 ha was affected by the scarab in the 1991 summer sunflower planting season. The other beetle, *Sphaeroderma* sp., also likes parthenium. After occurring in large numbers on the weed this flea beetle transfers to sunflower seedlings, causing severe "shot-holing" and plant death. Approximately 1 500 ha was severely damaged this year. Parthenium is an aggressive weed on disturbed areas, and much cultivated land on the Central Highlands is infested. Sunflower production is now suffering due to the increase of these two parthenium-feeding beetles. Les and Bronwyn Kettle have funding from the Oilseeds Committee of GRDC to study black sunflower scarab ecology.

Frank Page (Applethorpe) was visited by Zambian student from Macquarie University, Nason Chandra, to discuss the IPM program in apples. Frank reports that participants in the program were happy with the first year's results, despite severe mite pressure.

Two branch members, Judy Grimshaw and Brad Scholz, have recently been awarded MSc degrees from the Entomology Department, UQ. Judy's title was "Revision of the Oxyopidae of Australia" and Brad's "Pre-Release Evaluation Studies of Egg Parasitoids for the Management of *Heliothis* in Australian Cotton".

Perhaps as a forerunner of things to come, Iain Kay (Entomologist) and Lynton Vaudry (Experimentalist, Plant Pathology Branch) have been formed into a crop protection group at Bundaberg. A mirror image of this concept is also operating at Ayr.

University of Queensland, Gatton Campus

Errol Hassan, in conjunction with UNDP spent November to February on the Maldive Islands. The prime objective was to collect and investigate economic insect pests of the Islands and develop control methods suitable for the local environment. He visited a number of atolls and surrounding coral islands (well someone had to do it), which support small scale agriculture. He also produced an identified economic insect collection and compiled a handbook on the Islands' economic pests. Illustrations throughout the book are by photographs and associated line drawings. Errol says that he was under so much pressure to produce the book before he left that he only had one day of snorkelling in the blue waters.

Mount Glorious Biological Centre

The centre will be supplying much of the livestock for the newly announced insect house to be developed next year on the old Expo88 site adjacent to the Queensland Cultural Centre. This development will have a large flight cage occupying the roof area. On the floors below will be an education centre featuring live displays of a number of other large insects

Mike Parsons, from California, visited Tony Hiller in April on his way to Papua New Guinea where he will spend six weeks doing a status survey of the severely endangered giant butterfly, *Ornithoptera alexandrae*, for Conservation International in Washington.

Queensland Museum

Robert Raven is off to Hawaii to give an invited paper on the biology of New Caledonian mygalomorph spiders to the Pacific Science Congress. He stays on briefly to visit the Bishop Museum.

The travelling exhibition entitled "The Butterfly Man of Kuranda" is well uderway on its tour of Queensland. It opened at the Rockhampton Art Gallery on April 15 and has now moved to Gladstone for its second month on the road. Watch for it at Springsure, Mackay, Townsville, Innisfail, Cairns, Kuranda, Dalby, Warwick and other major towns as the year progresses. This spectacular show collection of tropical Australian insects was put together about 1910-15 by Frederick Parkhurst Dodd and he personally toured it around the eastern states in 1918 and 1923. His surviving children presented the 40 extant cases (there were originally 70) to the Queensland Museum in 1987. For the tour the cases have been mounted on panels to hang on gallery walls in conjunction with text and historic photographs. Much conservation and cross-pinning was required before the cases could travel. Some needed new backing cork and this

(continued on page 78)

Microscopy from Carl Zeiss

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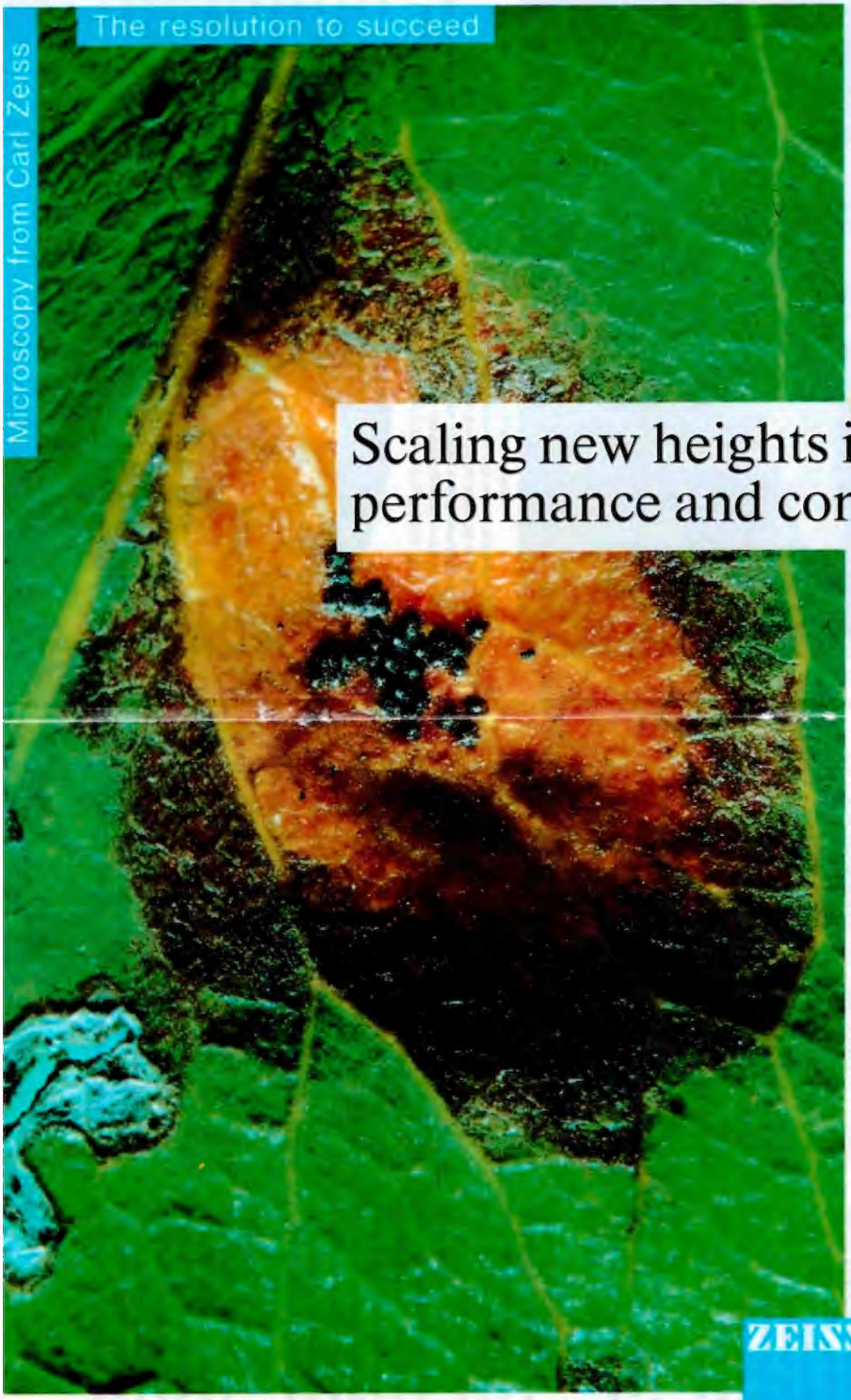

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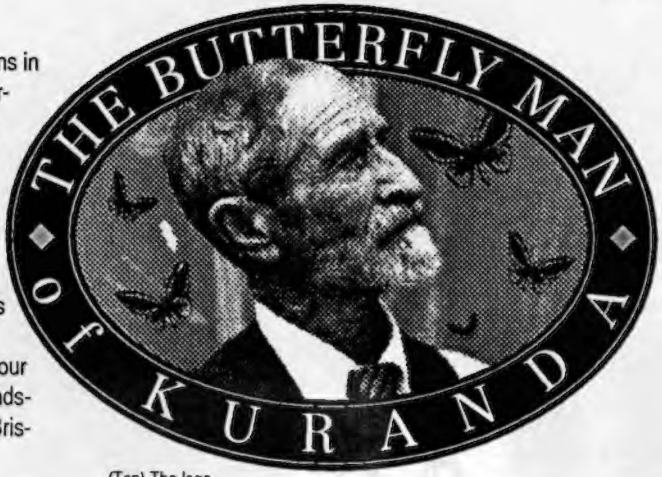
necessitated removal and rearrangement of specimens in some of the complex pattern cases, a tricky job undertaken by Geoff Thompson and Eddie Vesterberg. An attractive Exhibition Logo has been produced for the tour by the Museum's graphic designer, Paul Ramsden (who incidentally also does graphic design for "Myrmecia"). Geoff Monteith travels to each tour venue to give a lecture on the Dodd family. In co-operation with Education Officer, Heather Janetzki, he is also conducting workshops on "Insects in the Classroom" for school teachers at each venue. The Dodd tour has given the welcome opportunity to take these "hands-on" workshops, which have proved so successful in Brisbane, around the State.

Des FOLEY & Bernie FRANZMANN
Regional Councillors



(Top) The logo designed by Paul Ramsden for the Travelling Exhibition. The image of F.P.Dodd is taken from the classic photograph of him with his long net in his Kuranda garden in the 1930s. (Bottom) Eddie Vesterberg rearranging one of the Dodd beetle cases after replacing the backing. We've named this one the "Grand Parade" for its resemblance to the circles of stud livestock in the centre ring at big Australian agricultural shows.

NORTH QUEENSLAND NEWS

Graham Milledge from the Museum of Victoria spent several weeks in the north collecting various insect groups. He visited Cooktown, Georgetown and places in between.

Shausudin Osman, an entomologist from Malaysia visited northern Queensland in April, visiting Mike Cole in Ayr.

The Tropical Weeds Research Centre in Charters Towers made its first shipment of a biocontrol insect to an overseas release site recently. The psyllid *Heteropsylla*, was sent to Kerebat near Rabaul in PNG where its host, Giant Sensitive Plant, is a problem weed. Marie Ablin from TWRC will visit Kerebat in May to check on progress of the project, which is being partially funded by Ramu Sugar.

The Fifth Workshop in Tropical Entomology is being organised for July 1-5, 1991. To be held at James Cook University, Townsville, interest has been much greater than anticipated, with participants expected from north Western Australia, Northern Territory and all over Queensland. Main themes are entomology in tropical agriculture and insect quarantine concerns. The workshop is being organised by Ian Cunningham of DPI Mareeba, and in addition to sessions of conference papers, will involve a visit to the Tropical Weeds Research Centre, in Charters Towers. Funding is being partially provided by the Australian Entomological Society.

David Larson and family, from Memorial University in Newfoundland, have left for Madang, PNG after heavily predating the water beetle fauna around Mareeba for 5 months. The dytiscids (and reef fish) around the Christensen Research Centre are expected to take a similar battrering until August.

Barry Moore (Canberra) spent two weeks around Cairns in April. He had with him Dr José Galian from the University of Murcia in Spain. José is doing studies of the chromosomes of Australian Carabidae, so they spent time in pursuit of local carabids for this project.

Ross STOREY
Regional Councillor

NEWS FROM AFFILIATED SOCIETIES

Entomological Society of NSW Inc.

The March AGM saw a new president, John Macdonald having moved northwards out of Sydney. Graham Brown is the new President with Murray Fletcher the new Vice President as well as Secretary. Other changes were the election of Doug Rugg, Eren Turak and Angiolina Condello to the Council and, after many years, the retirement of Courtenay Smithers.

The April meeting, which was attended by a record number of people, featured a talk entitled "The Future of Science in the Real World" given by Don Burke of television fame. The talk focused on bridging the gap between scientists and the general public. It was both entertaining and stimulating, and was followed by lively discussion.

Future plans include field collecting trips and talks by Peter Lamond, Densey Clyne and Brian Read.

Graham BROWN
Representative Councillor

Entomological Society of Queensland

At the Annual General Meeting of March 11, Wendy Forno gave her out-going Presidental Address entitled 'Exploration: the backbone of Biological Control of Weeds'. At the same meeting the following office bearers for 1991 were elected.

President:	Dr R.J. Raven
Senior Vice President:	Dr G.G. White
Junior Vice President:	Dr I.W.Forno
Honorary Secretary:	Dr J. King
Honorary Treasurer:	Mr K.J. Houston
Publication Committee	
Convenor:	Mrs C.J.Neale
Councillors:	Mr G. Daniels
	Dr A. Macqueen
	Dr R. Wylie

The main business at the meeting held on April 8 was an address by Dr J. Aldrich (USDA) entitled 'Pheromones of good and bad bugs'.

On 13 May Tracey Churchill (QM) spoke on 'Trends in spider abundance in Tasmanian heathland'.

Our next meeting, to be held on June 11 will be a 'Notes and Exhibits' evening where members and visitors are able

to speak on entomological items of interest. A special contribution on insect problems in Papua New Guinea will be given by Professor Ray Kumar, a PhD student at UQ from the early 1960s, and who is currently Principal Entomologist in PNG. Visitors are always welcome.

Greg DANIELS
Representative Councillor

Entomological Society of Victoria

Activities of the Society from the beginning of 1991 have been as follows:

At the February General Meeting, Dr Mali Malipatil gave a slide presentation of insects in the Northern Territory.

In April, Dr Stephen McKechnie spoke on genetic variation in the checker-spot butterflies of California.

Between March and October, the Museum of Victoria is placing on public exhibition over 7000 butterflies, and for the first time ever, a comprehensive collection of the Australian fauna is on display. In addition to the above, several thousand more have been loaned by our members David and Joyce Holmes, who have possibly the largest private collection of foreign butterflies in Australia.

Mark M. HUNTING
Representative Councillor

"Insects of Australia"
Discount Offer to Members

Melbourne University Press have announced the publication date of the new 2-volume, completely revised edition of "Insects of Australia" as October 1991. They have also offered a very substantial discount of 40% off its retail price of $225 to members who order through the Australian Entomological Society.

A brochure with the details of this offer is enclosed with this issue of "Myrmecia". Please note that all orders must be sent to Geoff Monteith, Myrmecia Editor, at his address on the inside front cover of this issue. Payment in full should be enclosed, with cheques, etc made payable to Australian Entomological Society. At present the offer is planned to cease from the end of October. Books will be supplied to members when they become available from the publisher.

Overseas News

NEW ZEALAND

Six years of continuous re-organisation of science by the previous Administration almost brought science to its knees in New Zealand. Everything had to be accounted for, be "commercially viable" and ended with the utter destruction of the career structure. In short, scientists (a hundred or so who are professional entomologists) are understandably sceptical when a new administration comes along to "reorganise" us once again. No longer will we be working for Agriculture or DSIR or Forestry. From July next year, we will all be lumped into CRIs (Crown Research Institutes) which will supposedly have some guaranteed funding and the rest will come from competitive bidding. The politicians say we will be better off and have made a great show of setting up a task force to tour the country to get opinions from scientists. These they have had aplenty. Most professional scientists have taken the time to put in sensible suggestions, most of which are along the lines of having as few CRIs as possible - ie, one for Agriculture, one for Forestry one for Physical science. Every time this is suggested at the interminable meetings, we are told this is not politically acceptable. One is forced to wonder what is politically acceptable and the $20,000,000 which will need to be spent to set these Institutes up might be better spent on funding vital projects (such as flystrike) that are already short of funding as a result of government policies. All we can see is another layer of administration to an already top heavy system.

Why won't they just leave us alone?

The importance of local biotic surveys cannot be over emphasised when decisions affecting natural environments are being made so rapidly. Although it is not uncommon for surveys to be made on higher plants and vertebrates, similar data on terrestrial invertebrates is almost impossible to find.

This is one of several reasons why Dr G. Kuschel's 15 year survey of the Coleoptera of Lynfield (A suburb of Auckland) is a unique 120 page contribution to entomological knowledge. It has been published by the DSIR Library, Mt Albert Research Centre, Private Bag, Auckland.

The study was conducted in a suburban environment where numerous exotic plants and animals have been introduced, principally from the Northern Hemisphere over the past 200 years. J.F. Lawrence of the CSIRO considers this

to be an important contribution which will be of immense value to entomologists, ecologists and conservationists.

If that sounds like an advertisement, well, perhaps it is.

John TENQUIST
New Zealand Correspondent

PAPUA NEW GUINEA

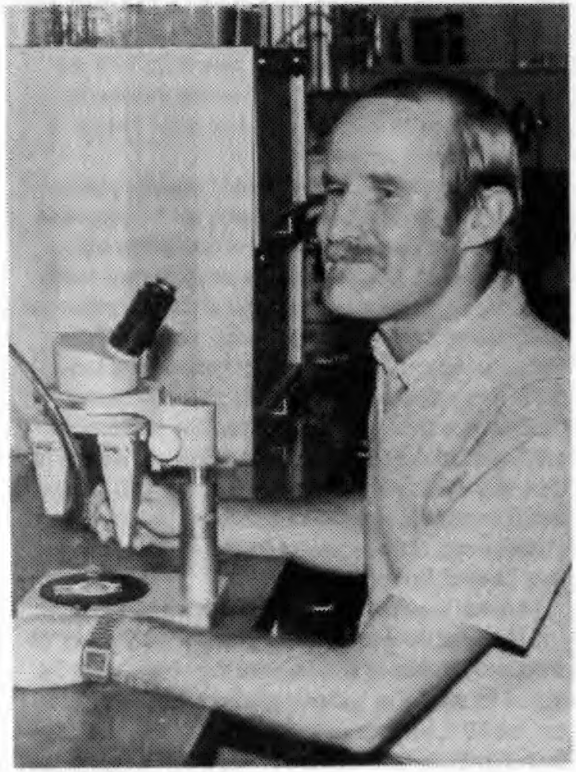
A one day seminar on "Pests and Diseases of Food Crops - Urgent Problems and Practical Solutions" was held in Port Moresby on 15th February, 1991. The seminar, attended by 37 people, and co-organised by Ray Kumar and Samson Laup, was chaired by Dr Arnold Ningiga, Director, Agricultural Protection Division, DAL. Papers were presented by the following: 1. "Pests of maize in Markham Valley" (Colin Scott); 2. "Research into pests of maize" (Ray Kumar); 3. "Pests of Sugarcane" (Lastus Kuniata and C.P.M. Sweet); 4. Horticultural pests and their management" (Geoff Wiles); 5. "Golden apple snail" (Samson Laup); 6. "Biological control of some crop pests" (Fred Dori); 7. "Diseases of food crops" (B.N. Muthappa); 8. "Funding of research projects" (Mezbah Ahmed); 9. "Emerging pest problems on the PNG Agricultural Scene" (Ted Sitapai and Ray Kumar).

A mimeographed proceedings of the above seminar is being published and complimentary copies may be obtained from the editor, Ray Kumar.

A 2 1/2 day meeting of the team leaders and senior staff of Agricultural Research Division was held in Port Moresby from March 18-20 under the chairmanship of Ted Sitapai, Director of the Division. Entomological papers presented at the meeting included the following: 1. "Biological control of taro beetles in the South Pacific" (Brain Thistleton); 2. "Proposals for the biological control of *Scapanes* and *Sexava* (Jean Morin); 3. "Emerging insect pest problems of Agriculture in PNG" (Ray Kumar). At the Plant Protection Inspectors course held at Mt Hagen, lectures were delivered on "Insects pests" (Ray Kumar) and "Noxious weeds" (Samson Laup). Malchus Arura returned on 2nd March, after attending a six week pest forecasting course held in Jakarta, Indonesia. Brain Thistleton (Taro beetle) and Jean Paul Morin (*Scapanes*, *Sexava*) visited Ray Kumar and studied the insects of their interest in the National collections.

Ray KUMAR
Papua New Guinea Correspondent

Obituary



Kenneth John Houston
(29 March 1951–6 April 1991)

Ken Houston spent his working life in the Entomology Branch, Queensland Department of Primary Industries, and rose to the position of Senior Entomologist in the QDPI Insect Collection. His responsibilities included identification of beetles, mites, aphids, immature insects, thrips and ants, groups requiring considerable entomological skills to master. Ken accepted this challenge cheerfully and developed a reputation of providing competent identifications, often at short notice. Ken's research interests lay primarily in the systematics, morphology and genetics of Coccinellidae and he was accepted as the Australian authority on this group. He is sadly missed by his many friends and colleagues.

Ken was born in Brisbane, but spent his childhood in Warwick and Toowoomba in southeast Queensland. He at-

tended Harristown State High School and his Grade 12 result of four 7's, a 6 and a 4 gained him a Commonwealth Scholarship to the University of Queensland. Ken graduated as BSc in 1971, having majored in entomology and genetics with distinctions and credits in both second and third year subjects in both disciplines. In 1983 he was awarded his MSc for a thesis on the genetic basis of colour patterns in some Australian Coccinellidae.

During his career Ken published 11 scientific papers, 3 of which were jointly authored. His early studies concerned mosaic dominance and inheritance of *Coelophora* and *Phrynocaria* spp., Coccinellidae. He also published morphological studies of the immature stages of Chrysomelidae and Coccinellidae and a series of taxonomic revisions of *Stethorus* Mulsant, a genus of minute mite-feeding ladybirds. This particular project required great care because of the small size of the included species. They are economically important due to their predatory habits and are proving to be very valuable in the banana industry in north Queensland. Ken recently completed a revision of the New Zealand *Stethorus* spp. at the request of DSIR and this appeared in *New Zealand Journal of Zoology*.

Another important contribution jointly published with Dr L.A. Mound of the British Museum (Natural History) was 'An annotated checklist of Thysanoptera from Australia'. At the time of his death Ken had several manuscripts in preparation and his colleagues have agreed to complete and publish them if possible. Ken collaborated with Mr R.D. Pope of the BM(NH) on the taxonomy of the Australian Coccinellidae and learnt much from this association. They worked together for a brief period in 1984 when Ken visited Pope in London after attending the International Congress of Entomology in Hamburg. His premature death cut short a productive career in Coccinellidae, as Ken had a firm vision for future research in ladybirds developed in conjunction with Pope.

Ken was not a prominent member of this Society as his personality did not lend itself to active participation in conferences or committee work. However there must be few taxonomists who are not aware of his work and Ken regularly received specimens, particularly ladybirds and thrips, from applied entomologists all over Australia. His expertise in identification will be missed, and difficult to replace.

Although quiet and reserved by nature, Ken was a loyal friend and colleague to many people. He had a very responsible attitude to science and was a capable scientist in both the service and research roles that he occupied. He had an enviable capacity to support his peers without looking for acknowledgement and to be a constructive critic. As a result, others had tremendous respect for him, perhaps more than he realised. It is because of such respect that his passing has caused great sorrow and a feeling of loss of someone who had so much left to achieve.

Ken's friends at QDPI Indooroopilly are among those who knew him best. He interacted well with us in both professional and social arenas and his unobtrusive presence was accepted as the way Ken liked it. He was a very valued and much-liked member of our community and it is difficult to accept that he is no longer with us. Our sincere sympathy goes to his parents, brothers and sister and their families.

Bryan CANTRELL
QDPI Indooroopilly

CONSERVATION COMMITTEE REPORT

This has been again a fairly quiet quarter for the Committee. The main item of interest has been the proposed Resource Security Legislation both in the Federal Parliament and in Tasmania. This legislation was put forward before the RAC (Resource Assessment Commission) brought out their report (to which we made a submission) on the "Timber and Forest Resources of Australia". Similarly in Tasmania decisions on rainforest areas to be logged were made before the National Rainforest Conservation projects produced their reports. In both cases this makes rather a mockery of the government's reliance on scientific evidence on which to base land management decisions and also of the public participation process. It is therefore hard to see at present what line we should pursue. The Minister, Ros Kelly, who (presumably) opposed the Federal legislation, will be giving a seminar in Canberra in late April and perhaps give us some indications. Her seminar is entitled "Resource security: Conservation security - Can we have one without the other in our forests?"The House of Representatives Standing Committee on Environment, Recreation and the Arts produced their report recently on management of the coastal zone. As mentioned in the last issue, we made a submission to the Inquiry urging consideration of invertebrate conservation in coastal management decisions. Although I have not yet seen the report, apparently it recommends that there

should be a national policy to manage the coast to stem the severe damage being done by uncoordinated local decisions. The "existing hodge-podge pattern of development" was "slowly nibbling away at the national coastline" and could lead to it being "lost for future generations". This is certainly a recommendation with which our committee would agree.

Most conservation interest recently has been in forests but one vegetation type which has been criminally neglected is of course native grasslands. Thanks to Ted Edward's castniid moth, some interest is being taken to protect patches of *Danthonia* grassland in the ACT and there was a meeting held here last month with government, scientific and conservation group participation to plan action. The moth occupied a prominent place in the proceedings. I wonder if there is any special effort to protect native grasslands in other states? Can anyone offer any information?

We have had some further involvement with the National Forest Inventory (NFI) and have registered as possible future users of their data base. The unit is planning another workshop shortly to "assist in the quantification and standardisation of attributes associated with Old Growth Forests" to which I have been invited. It is important that consideration of invertebrate habitat does not get forgotten when setting up the NFI data base.

A meeting is planned in Queensland in September with the title "Conservation Biology in Australia and Oceania". It is being organised by the University of Queensland's Centre for Conservation Biology and the Queensland NPWS in collaboration with some other organisations. We are hoping that at least one member of the committee will be able to contribute. Information about this meeting is given later under "Coming Events" so that any other member of the Society interested in attending can contact the organiser.

Another major item of interest is that the Australian Heritage Commission (AHC) has awarded a grant for the registration of invertebrate sites as part of the National Estate. Tim New and myself are the grantees but the AHC want members of the Society to be very closely involved in suggesting possible sites for registration. The first States to be considered are Victoria, New South Wales and South Australia. I am sure many of you know of sites that are worthy of registration, so please contact either Tim New or myself. We shall be talking about this project in more detail at the Melbourne AGM.

As far as current government inquiries are concerned, we are planning to contribute to the review of the Australian Plague Locust Commission and also look at the public report on the *Mimosa pigra* control programme in the Northern Territory. Contributions from members of the society to either or both of these would be very welcome.

Penelope GREENSLADE
(Convenor, Conservation Committee,
Australian Entomological Society)
CSIRO Division of Entomology
GPO Box 1700
Canberra ACT 2601

ANIC FUND ESTABLISHED

A CSIRO endorsed fund supporting the upkeep and further development of the Australian National Insect Collection, the *ANIC Fund*, is now fully established.

Enclosed with this issue of *Myrmecia* is a flyer providing detailed information about the *Fund*, how to support the *Fund* and the benefits you receive from supporting it.

The purpose of the *ANIC Fund* is to serve entomological research in Australia through an improved National Insect Collection. The *Fund* does so through funding of curation and collection-based research by visiting specialists, fellowships and short term appointments, collecting expeditions, publication and travel support.

Please note that *Fund members* (membership is automatic with donation of $100 or greater) will receive 30% discount on the purchase price of selected entomological books and you will receive the new ANIC Newsletter.

The *ANIC Fund* is supervised by a Board of Governors (Doug Waterhouse is the first Chairman and members include John Landy, Patricia Feilman and John d'Apice), a Management Committee (Chair: Max Whitten) and an Expert Advisory Committee (Chair: Ebbe Nielsen).

Ray McInnes is the Secretary of the Fund. Please contact Ray McInnes (ANIC Fund, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601. Telephone: (06) 246 4119) in order to obtain additional information about the *ANIC Fund*.

Ebbe S. NIELSEN
Australian National Insect
Collection

INSECT COLLECTION NEWS — AN UPDATE

Insect Collection News (ICN) is an informal newsletter for individuals associated with entomological collections around the world. Its purpose is to supplement the information of more general interest about biological collections distributed by the Association of Systematic Collections Newsletter. The ICN started as a handout for a talk presented by Ron McGinley, Chairman of the Entomology Department, National Museum of Natural History, Smithsonian Institution, Washington DC, at International Congress of Entomology in Vancouver, July 1988. Since then the issues have increased in size and the ICN has become more truly international. As part of this process Ron McGinley has appointed Laurence Mound, Keeper of Entomology, Natural History Museum, London and me as regional ICN co-editors. I am supposed to cover Australasia and hereby wish to ask for submission of material suitable for the ICN. I will also be contacting all entomological collections in the region in order to ask them to introduce the collection, staff and activities through ICN (the first was the NZAC in ICN No. 4, p. 22).

Please note that the ICN is free. You get on the mailing list by sending your name and mail address to me (CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601).

Ebbe S. NIELSEN

GORDON (TONY) ELLIS COLLECTION TO THE ANIC

The late Gordon Ellis

The Gordon (Tony) Ellis collection was donated to the Australian National Insect Collection (ANIC) in January 1991. It consists of about 2000 specimens of butterflies and moths. There are about 900 Tasmanian butterflies, 800 butterflies from mainland Australia and 300 moths from Tasmania. A small number of specimens are papered otherwise all specimens are set and well labelled. Of particular interest are long series of the Tasmanian endemic butterflies (*Oreixenica ptunarra* Couchman, *Argynnina hobartia* (Westwood), *Nesoxenica leprea* (Hewitson) and species which show interesting geographical variation (*Heteronympha cordace* (Geyer), *Pseudalmenus chlorinda* (Blanchard)). The collection also contains some rare melanic aberrations of Tasmanian satyrines.

Tony was born at Wallasey, Cheshire, England on 21 February 1918. He was from an early age keenly interested in astronomy and entomology. He was a Fellow of the Royal

Astronomical Society and the Royal Entomological Society from the early 1940's. His achievements in the UK include the first logging of the star Nova Puppis in 1942 which attracted considerable media coverage. At the same time he was assiduously building up a collection of British butterflies. This collection was left in London when he migrated with his family, to Hobart in 1959.

When circumstances permitted he resumed collecting with his usual enthusiasm and zeal. He was particularly interested in studying the variation in species occurring in different habitats and was greatly concerned about what he saw as the diminishing population of butterflies and moths in many areas of Tasmania.

Small, representative cross-sections of Tony's collection are retained by his son, Phillip, of Ferntree, and his daughter, Louise Watt of Taroona.

(The biographical notes are provided by Tony's widow, Joan Marion Swain, Kingston, Tasmania).

Ebbe S. NIELSEN and
Ted EDWARDS

RESEARCH GRANT REPORTS

Report to the Executive of the Australian Entomological Society on a Revision of the Cicada Genus *Gudanga* Distant (Homoptera: Cicadidae) funded by a Society Research Grant

By M.S. MOULDS
Entomology Department, Australian Museum,
Sydney, 2000

Cicadas of the genus *Gudanga* Distant are unusual in appearance as their fore wings are entirely pigmented black and nearly opaque while the hind wings have bright red or orange at their bases. They inhabit low rainfall areas, especially where mulga and brigalow grow; the nymphs probably breed on these and other *Acacia* species.

The genus is endemic to Australia and currently contains just two described species, both confined to Western Australia. I have described four additional species, three from Western Australia and one from Queensland. A key to species has been compiled and the genus redefined.

I would like to thank the Australian Entomological Society for providing the funds for illustrating this paper. The paper should be ready for publication shortly and hopefully will appear in a future issue of the Society's journal. The illustrations were prepared by Roger de Keyzer and the photographs were by Laurie Greenup.

Report to the Executive of the Australian Entomological Society on a study visit to British and European museums in January and February 1990, partly funded by an A.E.S. Research Grant

by Rudolf J. KOHOUT
Queensland Museum
Brisbane, Queensland

The genus *Polyrhachis* is one of the largest and most characteristic genera of Australian ants and its members are frequently encountered during environmental survey projects. In the past 200 years 20 authors have assembled a nomenclature which provides 137 available names for Australian species with the vast majority of the primary types being held in the great museums of Britain and Europe. Only a fraction of the types of Australian *Polyrhachis* species are represented in Australian institutions and no comprehensive revision has been attempted.

Rudy Kohout shivers outside the entrance of the Geneva museum during his Society sponsored tour of overseas museums

Sound taxonomic work depends upon examination and assessment of the primary type specimens. Thanks to loan arrangements I have studied some of these types, however, it has proved impossible to examine many of the types held in the overseas institutions. Some museums have a permanent policy of not loaning unique type specimens or, in some cases, the original types date back to the late 18th and early 19th century and are so fragile that any suggestion of sending them by mail is out of the question. Also, the types of several early authors, such as Latreille, Le Guillou, Guérin-Méneville, Roger and Mayr, were considered "missing" or "misplaced" and, furthermore, the types of many species are not labeled as such, and for the curators in charge of such material it is often impossible to ascertain the status of such material.

My present work is primarily directed towards revision of the Australian *Polyrhachis* and, therefore, it was absolutely vital to personally examine the relevant types of all species for which types are known to exist. To this end I put forward a proposal to the Executive of the Australian Entomological Society for a Research/travel grant to assist with financing a five weeks study trip to Britain and Europe. Included in the itinerary were those museums which hold the most important original material of Australian *Polyrhachis*, namely those in Paris, Geneva, Genoa, Vienna and London.

Thanks to the favorable consideration of my proposal I departed for Europe at the first opportunity, arriving in Paris at the end of January 1990. In the Museum National d'Histoire Naturelle I was able to locate several types, which have long been regarded as being lost. Possibly the most important discovery was that of two original type specimens of *Polyrhachis (Hagiomyrma) ammonoeides*, described by Roger in 1863. Other significant finds were the unique types of *Polyrhachis (Myrma) relucens* (Latreille, 1802) and *Polyrhachis (Myrma) grisea* (Le Guillou, 1841), both from Papua New Guinea. On the other hand, in spite of an extensive search, I was unable to locate the type of *Polyrhachis (Chariomyrma) guerini* Roger, 1863 which, according to Emery (1897), was in Paris museum collections at the end of last century. Instead, I examined a specimen labeled as seen by Emery and which is undoubtedly conspecific with the paradigms of *guerini* selected by Kohout & Taylor (1990) in lieu of the type. Mme Janine Casewitz Weulersse was a very pleasant and kind host whose tireless and constant help in my search through the maze of the various collections is here gratefully acknowledged.

The second museum on my list was the Museum d'Histoire Naturelle, Geneva, Switzerland which has one of the most important type collection of the Australian *Polyrhachis*. This is the collection of Auguste Forel, who described almost half of all named Australian species of the genus, with most specimens sent to him by retired Mackay farmer Gilbert Turner at the turn of the century. Included also is the material collected by Mjöberg, Biró, Froggatt, Lea, Walker, R. Turner and others. Remarkable is the large number of 'co-types' of numerous species described by other authors, such as Emery, Mayr, Viehmeyer and Stitz. Dr Besuchet was an excellent host who went out of his way in cutting short his holiday in the Alps to meet me at the Geneva railway station on Saturday night to organize my accommodation at the museum's own visitors' quarters.

Next journey took me to the Italian port city of Genoa and to the Museo Civico di Storia Naturale "Giacomo Doria". Within the walls of this museum is stored the very important collection of Carolo Emery, containing numerous types and original material collected by Beccari, D'Albertis, Doria, Loria, Biró, Podenzana and others throughout northern Australia, Torres Strait and Papua New Guinea. On my arrival, Dr Valter Raineri supplied me with a list of reasonable priced hotels - a rather thoughtful gesture which I really appreciated considering the exceptionally high prices of average city hotels recommended to me by the travel agency. The positive attitude of Dr Raineri to my visit and his co-operation made my work there a real pleasure. Thanks to his personal appeal, the museum's director generously agreed to donate a number of type series specimens to the Queensland Museum ant collection.

On my arrival in Vienna I felt like a return to my past. It was here in 1968 that I waited for almost a year to emigrate with my family to our new home in Australia. Only this time the feeling was more positive and gratifying. My first meeting with Dr Max Fischer, with whom I have corresponded for many years, went on exceptionally well and every day I spent in the museum was highly rewarding. The Naturhistorisches Museum holds the collection of Gustav Mayr, which again is one of the top ant collections in the world. It contains the types of species collected by Amalie Dietrich at Rockhampton, Peak Downs and Gayndah and described by Mayr (1876) in the *Journal des Museum Godeffroy*. It was generally accepted that, following the de-

scriptions, all unique types were returned by Mayr to the Godeffroy Museum. Following the collapse of the Godeffroy firm in 1879, the museum was liquidated in 1885. The remaining collections were than transferred to the Hamburg Museum which, as well known, did not survived World War II. What a surprise it was, when I discovered that the types which were presumed to have been lost in the ruins of the Hamburg Museum, are safe and sound in the Mayr collection in Vienna. The taxonomy of one of them, *Polyrhachis guerini pallescens*, has been discussed as recently as 1990 by Kohout & Taylor and *pallescens* was elevated to specific status. The authors also considered Emery's *depilis* to be its synonym and it is with satisfaction that the proposed synonymy was confirmed following the examination of the unique *pallescens* holotype.

It is difficult to describe in few words my visit to the British Museum (Natural History), which undoubtedly is the Mecca of entomologists worldwide, whether they like to accept it or not. I have always been grateful to Barry Bolton for his untiring support and for his prompt response to all my requests for various types during the past decade. Moreover, thanks to his generosity, a number of syntypes and paratypes of *Polyrhachis* species described by Donisthorpe have been lodged in the ant collection of the Queensland Museum. A few more of them I have been permitted to take during my visit, together with numerous duplicates of various species from old and new collections. Also a representative collection of Afrotropical *Polyrhachis* has been generously donated by the British Museum to our collection. One of the highlights of my visit was the chance to examine the unique holotype of *Formica ammon (Polyrhachis (Hagiomyrma) ammon)*. It was collected in Australia during Cook's voyage and described by Fabricius in 1775. My stay in the British Museum was certainly the pinnacle of my study tour and will always be gratefully acknowledged.

Being in London, my study trip would not have been complete without visiting Oxford and the Hope Entomological Collections in the Oxford University Museum. This collection is not very rich in types of Australian *Polyrhachis* and contains only a few types of species from northern Australia, collected by G.F. Hill, R. Turner, J. Clark, A.H. Arnold and F.P. Dodd and described by W.C. Crawley. Of course the real magnet for myrmecologists is the W.W. Saunders collection of Smith's types of ants collected by Alfred Russell Wallace. Dr Chris O'Toole was a very helpful and accommodating host and my visit there was certainly memorable.

I am very grateful to the Australian Entomological Society for favourably considering my application and for the generous sum that was allocated to my project. I also feel obliged to thank all the co-operating curators, who often went far beyond their ordinary duties to accommodate my particular needs. Thanks to their co-operation and sometimes also to their great patience, the results of my study tour were an unqualified success.

NEW ISSUE OF INSECT POSTAGE STAMPS

Australia Post issued on April 11 four postage stamps illustrating Australian insects. The artwork is by David Nelson and is based on colour photographs by Bob Lewis, Bob Jessop and David Knowles. They are as follows:

43 cent: Cotton Harlequin Bug, *Tectocoris diophthalmus*.
43 cent: Hawk Moth, *Cizara ardenia*.
80 cent: Leichhardt's, Grasshopper, *Petasida ephippigera*.
One dollar: Jewel Beetle, *Castiarina producta*.

To promote the stamps Australia Post has issued "First Day Cover" envelopes postmarked with a special Bogong Moth impression. Also available are stamped "Maximum Cards" which feature multiple images of the stamp insects and which can be used as ordinary postcards. These are available for $4.50 each

CSIRO
Division of
Entomology
FIRST DAY OF ISSUE
AUSTRALIAN NATIONAL INSECT COLLECTION FUND
Australian National Insect Collection Fund
Insects are the most diverse group of living organisms. The number of living species is above ten million worldwide. It is estimated that at least 300 000 of these occur in Australia and most of these occur nowhere else.
The Australian National Insect Collection (ANIC) in the CSIRO Division of Entomology is the world's largest collection of Australian insects. The ANIC was started in 1928. Since then the collection has been formally recognised as a national collection, and as a significant part of Australia's natural heritage.
The ANIC Fund was established in 1991 to support such essential activities as collecting expeditions, curation and research. The inaugural Chairman of the Board of Governors is Dr D. F. Waterhouse, A.O., C.M.G., D.Sc, F.A.A., F.R.S.
The cover illustration depicts the entrance to the D. F. Waterhouse wing of the ANIC buildings with the moth Carthaea saturnioides which is unique to Australia.
POST OFFICE PHOTOGRAPH
J. F. Dodd (1861 - 1937)
Pioneer amateur entomologist

ANIC STAMP PROMOTION

The Australian National Insect Collection (ANIC) has arranged for the release of a special "Collectors Cover" concurrent with the Post Office release. Profits from these will benefit the recently established ANIC Fund. These feature illustrations of the endemic moth, *Carthaea saturnioides*, the entrance to the ANIC and the famous pioneer amateur entomologist, Frederick Parkhurst Dodd. They are also postmarked with the Bogong Moth imprint. They can be obtained for $6.00 from Ray McInnes by writing to ANIC Fund, CSIRO Division of Entomology, P.O.Box 1700, Canberra, ACT. 2601 or by telephoning (06)2464119. A Limited Edition of these covers, personally signed by Dr.D.F.Waterhouse, ex-Chief of CSIRO Division of Entomology and first Chairman of the ANIC Fund, is available from the same source for $10.00 each.

Coming Events

1991 OPEN FORUM AND AGM OF ECOLOGICAL SOCIETY OF AUSTRALIA

This meeting will be held at ANU in Canberra from Wednesday 2nd to Friday 4th of October, 1991. Registration details will be announced soon in the Society's Bulletin. Non-members may get details from the Honorary Secretary:

Dr Tony NORTON
Centre for Resource and Environmental Studies
ANU, GPO Box 4, Canberra ACT 2601

SYMPOSIUM ON INSECT MOLECULAR SCIENCE

This is the 16th in the Royal Entomological Society of London's Series of Symposia and will be held at Imperial College, London, on 12th-13th September, 1991. The aim of the meeting is to provide an outline and update of the use and application of molecular science in relation to entomology. It is targeted at informed entomologists. The main meeting will be preceded by a workshop which aims to provide a forum to explore DNA transformation of non-drosophilids. The workshop will be held at 2.00 pm on 11 September. Information leaflets from:

The REGISTRAR
Royal Entomological Society
41 Queens Gate
London SW7 5HU
England

CONSERVATION BIOLOGY IN AUSTRALIA AND OCEANIA

A conference on the above topic will be held at the University of Queensland from September 30 - October 4, 1991. The meeting is being arranged by the UQ Centre for Conservation Biology and the Queensland NPWS with sponsorship from ANPWS, the World Wide Fund for Nature and the WA Dept of CALM. A brochure is available from:

Dr P. HALE
Executive Director, Centre for Conservation Biology
Zoology Department
University of Queensland, St Lucia Qld 4072

ADVANCE NOTICE OF 23RD AGM

The 1992 Conference and AGM of the Australian Entomological Society will be held at the University of Tasmania in Hobart during February, 1992. Tentative dates are 2–6 February. Further details, including firm dates, will appear in the next issue of "Myrmecia".

Although this is a radical change from the normal timing of Society meetings, there are a number of good reasons for holding a Hobart meeting in February. The weather is generally better, but not guaranteed, and insect activity is generally at or near its peak.

Margaret WILLIAMS
(For the Organising Committee)

SYMPOSIUM AND WORKSHOP ON BIOLOGICAL COLLECTIONS

Australia's Biota and the National Interest - The Role of Biological Collections

The Australian Academy of Science and the Australian Institute of Biology are organising a two-day symposium and workshop on the above topic. It is to be held on Monday 11th and Tuesday 12th November, 1991 at the Academy of Science in Canberra. Biological collections in Canberra will be open to visitors on Wednesday 13th November.

The purpose of the Symposium is to review the role of Australia's major biological collections in modern biology (such as systematics, biodiversity and biogeography) and in the management of our environment. The meeting will also address management, staffing and funding for collections. Discussions at the meeting will cover both Federal and State funded collections and their relationship with the Museum of Australia.

The meeting could provide valuable advice to Federal and State Governments on biological collections. The Federal Government is currently concerned with the level of continuing support for the maintenance of its biological collections and coordination between collections.

For further details, contact:

Biological Collections Meeting
ACTS
GPO Box 2200
Canberra ACT 2601
Fax: (06) 257 3256

TENTATIVE CONFERENCE ON MIDGE ECOLOGY

ORSTOM and ITRMLM intend to organize an international meeting on ecology of Ceratopogonidae which could be held in Tahiti in September 1992. The congress could be based on papers and posters presentation, as well as discussions on special topics which are to be defined. As no such conference has previously been held in Tahiti the organizers are attemting to assess the feasibility of going ahead with their plans. If any readers think they may be interested in participating in this event could they please write to Dr Frederic Lardeux at the address below to receive an information sheet and questionnaire:

Dr F. LARDEUX
ORSTOM/ITRMLM
B.P.30, Papeete, Tahiti
FRENCH POLYNESIA

ANZAAS CONGRESS 1991 — Adelaide

The theme of this years's ANZAAS meeting is "Reproduction and Renewal". Sessions within the Biological Sciences field include: Reproduction in plants and animals; Renewal of the degraded environment; Population control and toxins; Reproduction in an arid environment; Counting the cost- genetic engineering. The meeting takes place at the University of Adelaide on October 1-3 and enrolment information is obtainable from: ANZAAS CONGRESS 1991, c/- Professor David Boyd, University of Adelaide, GPO Box 498, Adelaide. S.A. 5001.

The theme of this major conference will be "Pest Control and Sustainable Agriculture". It is to be held at Australian National University, Canberra, over the period April 27 to May 1, 1992. The conference is approved by the Australian Standing Committee on Agriculture, and is being organized by the CSIRO Division of Entomology.

Sessions for the conference are expected to be: Integrated Pest Management, Pest Damage Assessment, Inundative and Inoculative Biological Control, Chemical Control, Cultural Control, Host-plant Resistance, Pheromones, Biotechnology and Molecular Biology, Modelling and Forecasting Pest Populations and Pollination Biology.

Further details are available from Dr Wendy Milne, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601.

8TH INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS

To be held at Lincoln University, Christchurch, New Zealand, during the period 2-7 February, 1992. Information is obtainable from Ms P. Syrett, DSIR Plant protection, Private Bag, Christchurch, N.Z.

1991 Listing of Postgraduate Projects in Entomology

AN AUSTRALIAN SURVEY

My thanks to all those people who quickly replied to my very late request for details of postgraduates for our annual survey. In fact, only 8 of the 28 Institution personnel contacted have not yet responded. I apologize to Ken Brown (UTS), Charles Webb (NTU) and Harley Rose (SU) (23 projects in all) for, although I received their lists, they were too late for this issue and will be included along with the statistics in the next issue of MYRMECIA. At this time the total listing for 1991 is 216 (including the 23 projects not yet published), compared with 240 projects recorded at this time last year.

Because of my absence in the field during the important reply period of the survey (a common habit of mine), I was fortunate and most thankful to have Merilyn Pierce (CERIT) offer to do the hard work of entering the names in the database and answer queries in my absence.

Jenny ANDERSON
CERIT, University of New South Wales

QUEENSLAND

UNIVERSITY OF QUEENSLAND
(S. MAMIN)
Department of Entomology

BALLANTYNE, L. Revisional studies on the Luciolini (Coleoptera: Lampyridae: Luciolinae) (PhD).

BANDARA, H. Factors influencing host plant selection in *Euploes core corinna* (MAgSc).

BURWELL, C. Systematics of some Australian Entedoninae (Hymenoptera: Chalcidoidea: Eulophidae) (PhD).

CLARKE, A.R. A reanalysis of *Nezara viridula* (L) biological control in Australia (PhD).

CORCORAN, R. Physiological and behavioural mechanisms of heat tolerance of *Bactrocera tryoni* (MSc).

COUSINEAU, M. Homogeneity among geographically distinct populations of *Aedes* (Halaedes) *Australis* (Erichson) (PhD).

ELSON-HARRIS, M. The systematics of Tephritidae (Diptera) based on comparative morphology of immature stages (PhD).

FLOWER, P. An evolutionary study of the ant-tree association, *Podomyrma* sp.nov. and *Canthium* spp. and several inquiline species (MSc).

FERNANDO, P. Aspects of the ecology of *Aphytis lingnanensis* Compere and *A. melinus* DeBach (Hymenoptera: Aphelinidae) females, parasitoids of *Aonidiella aurantii* (Mastell) (PhD).

FORRESTER, N. Management of insecticide resistance in *Heliothis armigera* (PhD).

FREEBAIRN, C. The sex determination, biology and taxonomy of a new genus of mermithid nematodes parasitising Australian mosquitos (PhD).

GRIFFITHS, M. Aspects of the life history and biology of the Red Cedar Tip Moth (*Hypsipyla robusta*) (PhD).

HEARD, T. Aspects of the pollination of Macadamia and Cashew (PhD).

KHAN, S. Improved management and trapping of the key insect pest of cultivated Hibiscus, *Macrovra concolor* (Macleay) (Coleoptera: Nitidulidae) (BSc Hons).

KING, J. Systematics of some Australian Megachilidae (MSc).

MAYNARD, G. Studies on Australian bees of the genus *Leioproctus* Smith (PhD).

MILES, M. Aspects of the population biology of the polyphagous bug, *Creontiades dilutus* (MSc).

MILNE, J. The role of thrips in the transmission of pollen-borne viral diseases and the relations of these thrips with their host plants (PhD).

MURRAY, D. Population dynamics of *Heliothis* - factors influencing survival and development of the pupal stage (PhD).

OLLEY, L. Colour attractants (hue and intensity) of Tabanids (BScHons).

PERMKAM, S. Taxonomic studies of the Australian Trypetinae (Diptera: Tephritidae) (PhD).

PETERS, B. Termite-fungi interactions (MAgSc).

RUNGROJWANICH, K. Biology and ecology of fruit fly parasitoids in Queensland (PhD).

SABIO, G. Predator prey relationships: *Coleophora inaequalis* and *Aphis nerii* a case study.

SPARKS, D. Biological control of fireweed: A pre-release study (MSc).

TITMARSH, I. Population dynamics of *Heliothis* - factors

influencing survival of immature stages on various host plants (PhD).

WALLACE, H. Insect pollination of Macadamia (PhD).

WILSON, L. Management and ecology of spider mites in cotton (PhD).

YARE, M. Insect pollination studies of custard apples (*Annona* sp.) (PhD).

ZHEN, CHANG SHENG. Laboratory and field studies of the control of *Heliothis* with natural insecticides (PhD).

Department of Botany and Entomology

BOSSELMANN, A. Response of *Azadirachta indica* to environmental factors (PhD).

Department of Entomology and Anatomy

PAVEY, C. Feeding ecology of insectivorous bats, with emphasis on prey specificity (PhD).

Department of Entomology; Physiology & Pharmacology

MEURANT, K. Study of the prothoracic gland/Corpus allatum/Corpus cardiaca ring complex of the Australian blowfly larvae *Lucilia cuprina* (PhD).

Department of Entomology and Zoology

JAMES, C. Evolutionary ecology of anuran species of Eastern Australia (PhD).

Department of Microbiology

KLOSE, M. Transmission of tobacco streak virus and other pollen-borne viruses by thrips (PhD).

LLOYD, A.C. The bacteria associated with fruit flies and their host plants (PhD).

Tropical Health Program & Department of Entomology

FOLEY, D. Investigations of the *Anopheles punctulatus* complex (PhD).

MUIR, L. Olfactory attractants for *Aedes aegypti* (PhD).

Department of Zoology

BROWN, M.D. Biological control of mosquitos (PhD).

GATTON COLLEGE

(DR. E. HASSAN)

Plant Protection Department

HUSSEY, B. Testing the insecticidal effect of neem extract in field conditions and comparing to a standard insecticide used in broccoli production against cabbage moth, (*Plutella xylostella* L.) (BAppSc Hort.Tech.).

STANTON, C. The use of an annual hedge as a potential source of parasites and predators controlling cabbage moth,(*Plutella xylostella* L.) in combination with biological agents such a *B. thuringiensis*.(BApp Sc Hort.Tech.).

CUTLER, L. The use of flowering plants as a potential food source for parasites and predators of cabbage moths, (*Plutella xylostella* L.) (BAppSc Hort.Tech.).

PRIJONE, D. Insecticidal activities of extracts of three tropical plants on the cabbage cluster caterpillar, *Crocidolomia binotalis* Zeller (MAgrSc).

KABENYA, A. The influence of barbohydrate on population dynamics of honey bee (*Apis mellifera* L) colonies (MAgrSc)

SCHLACK, S. Quarantine status of the fruit-fly *Atherigona orientalis* (Schiner) in export cucurbits (MAgrSc)

JAMES COOK UNIVERSITY

(Prof. R.E. JONES)

Zoology Department

BENSON, L. Allochthonous input and processing in a rainforest stream (PhD).

BRABY, M. The ecology of tropical satyrine butterflies (PhD).

CLAYTON, P. The fauna of permanent waterfalls (PhD).

DAVIS, A. The development of database management techniques for ecological survey data and its application to a study of ant communities (MSc).

DOWNES, M. Biology of subsocial spiders (PhD).

HURLEY, M. Insect herbivory on stinging-trees (MSc).

JACKSON, R. Herbivory on rainforest pioneer tree species in the genus *Alphitonia* (PhD).

PRASAD, M. Host-seeking behaviour in herbivorous insects (MSc).

RAE, D. The ecology of sugarcane mealybugs *Saccharicoccus sacchari* (PhD).

ROSSER, Z. Effects of disturbance on rainforests stream communities (Hons).

SEYMOUR, J. Geographic variation in parasitoids of Australian *Heliothis* species (PhD).

WILKIE, L. Taxonomy and prospects for biological control of the banana scab moth (PhD).
YULE, C. Life-history patterns of tropical stream insects on Bougainville (PhD).

GRADUATE SCHOOL OF TROPICAL VETERINARY SCIENCE & AGRICULTURE
BELLIS, G. *Culicoides* transmission of Bluetongue (MSc).
PUTRA, A. Life cycle aspects of *Oncocerca gibsoni*, including vector competence of *Culicoides marksae*.

NEW SOUTH WALES

CHARLES STURT UNIVERSITY, RIVERINA
(Mrs. L. BALLANTYNE)
Faculty of Science and Agriculture
BELL, D. Monitoring and modelling Oriental Fruit Moth (*Cydia molesta*) in the Combram Stone Fruit District, Victoria (MSc).

MACQUARIE UNIVERSITY
(A/Prof. D. HALES)
School of Biological Sciences
BLANCHE, K.R. Gall insect communities in relation to soil fertility (PhD).
BLANCO, L. Interactions between aphid saliva and plants (PhD).
GARCIA, G. Classification of *Paecilomyces* species for use in biological control (in association with UNSW, Department of Biotechnology) (MSc).
HEINS, A.M. Degradation of organochlorine pesticides in soil by rot fungi (PhD).
HORWOOD, M.A. Comparison of effects of juvenile hormone deficiency and parasitisation in the Australian plague locust (MSc).
LEFEBVRE, M. Responses of honeybees to electromagnetic stimuli (PhD).
MILLER, J. Reproductive biology and life history of Australian Onychophora (MSc).
MOULDS, M.S. A revision of the cicada genus *Abricta* (MSc).
OLIVER, I. Quantifying arthropod biodiversity for conservation biology (PhD).
REID, A. Taxonomy of Australian Onychophora (PhD)
ROGERSON, L. Comparison of ant seed dispersal on infertile and fertile soils (PhD).
TRIMBLE, J. Antimicrobial properties of secretions from the metapleural gland of *Myrmecia gulosa* (Australian Bull Ant) (Msc).
TURAK, E. Sitobion species on grasses and cereals in Australia (MSc).
WATSON, K. Effects of plant substances on ant colony demography (MSc)

UNIVERSITY OF NEW ENGLAND
(Prof W. DANTHANARAYANA)
Department of Zoology
ASANTE, S. Biological and ecological studies of the woolly apple aphid *Eriosoma lanigerum*, with reference to control (PhD).
COOMBS, M. Flight and migratory potential of *Helicoverpa armigera* and *H. punctigera* (Lepidoptera: Noctuidae) (PhD).
GU, M. Ecology and genetics of flight activity of the light brown apple moth, *Epiphyas postvittana* (Walker) (PhD).
HOLDEN, C. Environmental physiology of scorpions (PhD).
SINK, H. Embryonic development of the nervous system of *Drosophila* (PhD).

UNIVERSITY OF NEW SOUTH WALES
(Prof. T.J. DAWSON)
School of Biological Science
GOLETSOS, C. Defensive behaviour of aphids (MSc).
HERBERSTEIN, M. Foraging behaviour of orb-weaving spiders (BSc Hons).
KOULIANOS, S. Mitochondrial DNA variation between Australian honeybee strains (BSc Hons)

CENTRE FOR ENTOMOLOGICAL RESEARCH AND INSECTICIDE TECHNOLOGY (CERIT)
McLEOD, L.J. Overwintering strategies and emergence patterns of *Lucilia cuprina* and *Chrysomya rufifaces* in the arid zone of NSW (PhD).

UNIVERSITY OF WESTERN SYDNEY, HAWKESBURY
(R. SPOONER-HART)
Faculty of Agriculture
CHANDA, N. Farmer perception and acceptance of integrated pest management programmes (MSc).

Faculty of Horticulture

DITCHFIELD, C. Improved strains of the predatory mite *P. persimilis* for integrated mite control in horticultural crops (MSc).

JOHNSON, S. Field evaluation of *Apis mellifera* in southeast Asia (MSc).

MASSOUD, M. Biology and population dynamics of *Heliothrips haemorrhoidalis* (PhD).

SINGH, S. Biology and control of the rice leafroller *Marasmia exigua* (Lepidoptera: Pyralidae) in Fiji (PhD).

VICTORIA

LA TROBE UNIVERSITY

(Dr. T. NEW)

Department of Zoology

BARRASS, I.C. Population biology of mealy bug on pears (PhD).

BRITTON, D.R. Studies of Lepidoptera on native and introduced trees (MSc).

CAMERON, A.J. An ecological study of the Kerang wetlands (MSc).

ENDANG SRI KENTJONOWATI Biogeography of Psocoptera in the Indonesian archipelago (MSc).

HAWKING, J. Distribution and ecology of Odonata in the Kiewa River System (MSc).

HOCHULI, D.F. Feeding biology of the armyworm (PhD).

KOBELT, A.J. Population dynamics of native budworm in field peas (MSc).

SCHMIDT, E.R. The systematics and biogeography of the Psocoptera of Tasmania (PhD).

SILBERBAUER, L.X. Population biology and sociality of *Econeura* in relation to fire regimes (MSc).

SMITH, A.M. Biology and control of the pea weevil (PhD).

WALKER, K.L. Taxonomic revision of *Lasioglossum* (PhD).

WANG, Q. Taxonomy and biogeography of Australian Phoracanthini (Coleoptera, Cerambycidae) (PhD).

Department of Genetics and Human Variation

BLOWS, M. *Drosophila* ecogenetics (MSc).

JERMIIN, L. Evolution and biogeography of ants studied with mtDNA sequences (PhD).

KOULIANOS, S. DNA variation between Australian honeybee strains (MSc).

LOWE, R. Genetic and ecological aspects of sociobiology of social spiders (MSc).

School of Agriculture

BOURNE, J. Isolation of gut membrane protein and establishment of cell lines from *Lucilia cuprina* (PhD).

COLLINS, B.J. Isolation of molecules from larvae of *Lucilia cuprina* which affect inflammation in sheep (MSc).

HOLT, H. Isolation of molecules from *Lucilia cuprina* that affect cellular integrity and function in sheep (MSc).

O'MEARA, T.J. Analysis of skin responses in sheep resistant and susceptible to the blowfly *Lucilia cuprina* (PhD).

NESA, M. Inflammation responses in sheep bred for resistance or susceptibility to fleece rot/blowfly strike (MSc).

UNIVERSITY OF MELBOURNE

(Dr. J. MARTIN)

Department of Genetics

ANDREWS, J.R. The function of the suppressor of stoned locus in *Drosophila melanogaster* (PhD).

CHEN, Z.Z. Molecular and cytological studies in dipteran insects (PhD).

COULSON, E. A molecular analysis of the region of the X chromosome around the stoned locus of *Drosophila* (BSc Hons)

DAVIES, A. Molecular and genetical analysis of Scalloped wings in *Lucilia cuprina* (PhD).

FABB, S. Storage proteins in *Chironomus* (PhD).

KREIDL, . Asymmetry modification: the influence of a modifier on multiple resistant strains of *Lucilia cuprina* (BSc Hons).

MERAKOVSKY, J. The molecular genetics of *Drosophila* stoned gene (PhD).

MORGAN, M. The molecular genetics of the shibire locus in *Drosophila melanogaster* (PhD).

PEETERS, A. Studies on a Drosophila gene encoding a calmodulin binding protein (BSc Hons).

Department of Zoology

DAWS, A. Burrows of mole crickets (BSc Hons)

EVANS, T.A. Evolution of social behaviour in Diaea (Aranea: Thomisidae) (PhD).

KING, I. Sound production in the freshwater heteropteran *Micronecta* (MSc).

DEAKIN UNIVERSITY

(W.S. LAIDLAW)

School of Biological Sciences

LAIDLAW, W.S. The effects of *Phytophthora cinnamomi* on flora and fauna of Eastern Otways, Victoria (includes insect pitfall trapping and scat analysis) (PhD).

WESTERN AUSTRALIA

CURTIN UNIVERSITY OF TECHNOLOGY

(Dr. J.D. MAJER)

School of Environmental Biology

HOULDING, B.J. Integrated pest management in Western Australian strawberry crops (MAppSc)

PARK, H.C. Role of the termite *Drepanotermes tamminensis* in nutrient cycling in two wheatbelt vegetation types (PhD).

SCOUGALL, A. Characterisation of edge effects in remnants of open Jam-York Gum woodlands in the Western Australian wheatbelt (Hons).

MURDOCH UNIVERSITY

(Dr. M. CALVER)

School of Biological and Environmental Sciences

BALLA, S. Life history strategies of aquatic fauna, nutrient enrichment and water level fluctuations in Perth wetlands (PhD).

LUND,M. Biomanipulation of wetland water quality (PhD).

GRONNS, I. The effects of logging on macroinvertebrate community structure and function in streams of the Karri forest, WA (PhD).

LATCHFORD, J. The environmental impacts of physical mosquito control methods in salt marshes (PhD).

CHARLTON, L. Odonata of the millstream region, WA (PhD).

TRAYLER, K. The effect of sumilarv on non-target wetland invertebrates (PhD).

GEORGE, K. Wetland plant/invertebrate interactions (Hons).

KIRBY, D. The relationship between nutrient enrichment and midge production in wetlands (Hons).

UNIVERSITY OF WESTERN AUSTRALIA

(Dr. W.J. BAILEY)

Department of Zoology

BERLANDIER, F. Ecological studies on the bluegreen and cowpea aphid (MSc).

CHOKBOWTHANASARN, W. Factors involved in the encapsulation of the parasitoid *Cotesia glomerata* (L) (Hymenoptera: Braconidae) by its host *Pieres rapae* L (Lepidopera: Pieridae) (MSc).

DOLSOPON, S. Effect of changing population densities on the fecundity and sex ratio of mixed species of *Comporicila bifasciata* Howard and *Aphytis melinus* DeBach, parasitoids of the Californian red scale *Aonidolla aurantii* (Maskell) (PhD).

DOLVA, G. Survivorship and morphological variation of the cricket *Numbungia balyarta* in response to burning history of the W.A. Jarrah forests (MSc).

FOGLIANI, R. Diapause in *Chamaesphecia doryliformis* (Lepidoptera: Sesiidae) a biological control agent of fiddle dock. (Grad Dip).

LEBEL, L. Factors controlling the distribution of Trichoptera in freshwater streams (PhD).

LILLYWHITE, J. Immunological studies of insect predation in dung (MSc).

WALDEN, K. The biology and control of the native budworm (*Heliothis punctigera*) in WA (PhD).

WATANASIT, S. Larval competition of the damselfly *Xanthagrion erythroneurum* and its effect on individual reproductive success (PhD).

WIJESURIYA, S. An ecological study of fruit fly populations in north Western Australia (MSc).

YEOH, P. Lekking behaviour of Ceratitis capitata (Diptera: Tephritidae) (MSc).

Department of Geography

LOBRY de BRUYN, L.A. The role of ants and termites in modifying the soil properties in naturally vegetated and agricultural environments (PhD).

AUSTRALIAN CAPITAL TERRITORY

AUSTRALIAN NATIONAL UNIVERSITY

(Dr. P.J. GULLAN)

Division of Botany & Zoology, Faculty of Science

ARNEY, M.C. Control of *Eriococcus* species (Coccoidea: Eriococcidae) in urban areas (Grad DipSc).

BERRY, J.A. A revision of the Australasian Eunotinae (Hymenoptera: Pteromalidae) (PhD).

DRAYSON, N. A taxonomic revision of *Cricotopus* (Diptera: Chironomidae) (MSc).

DRISCOLL, D. Insect colonization of *Eucalyptus blakelyi* seedlings: the influence of habitat and birds (BSc Hons).
HANCOCK, A. Karyology of a hybrid population of two chromosomal races of the huntsman spider, *Delena cancerides* (BSc Hons).
LOOF, S.R. Morphological, karyological and electrophoretic variation in the blackfly *Austrosimulium bancrofti* (Grad DipSc).
MILLER, L.R. Systematics of *Nasutitermitinae* (Isoptera) (PhD).
QIN, T.K. The phylogeny and biogeography of the wax scale insects, *Ceroplastes* species (Hemiptera: Coccidae) (PhD).
ROACH, A.M.E. The taxonomy and biology of Anthrenocerus (Coleoptera: Dermestidae) (BSc Hons).
TRUEMAN, J.W.H. Odonate systematics and phylogeny (PhD).
VRANJIC, J.A. The influence of gum tree scale insects (Homoptera: Eriococcidae: *Eriococcus coriaceus* Maskell) on the growth of their host plants, *Eucalyptus* spp. (PhD).
WILLIS, A.J. Impact of the biological control mite *Aculus hyperici* on non-target native *Hypercum* species (PhD).

Division of Biochemistry & Molecular Biology, Faculty of Science

GARCIA, R. Structure and regulation of the topaz eye colour gene of *Lucilia cuprina* (MSc).
TEN HARVE, J. The regulation of the scarlet gene of *Drosophila melanogaster* and the molecular nature of natural mutation of the scarlet locus (MSc).
PERKINS, H. Molecular biological studies of genome organisation and mutation in *Lucilia cuprina* (PhD).
NIKOLAKOPOULOS, T. Identification and analysis of the cis-acting regulatory sequence of the cinnabar gene of *Drosophila melanogaster* (MSc).

Centre for Visual Sciences, Research School of Biological Sciences (RSBS)

DUBOIS, R. Elementary motion detection in butterflies: pattern recognition and machine vision systems (PhD).
HOLMQVIST, M. Physiological properties of visual neurons in flies (PhD).
SUN, X. Recording from butterfly brain: object and motion neurons (PhD).
YANG, E. Recording from colour-sensitive neurons in butterflies and dragonflies (PhD).

Molecular Neurobiology Group, RSBS

JONES, M. The cellular and molecular basis of limb morphogenesis in the locust, *Locusta migratoria* (tentative topic) (PhD).
SCHUPPLER, U. Molecular and genetic characterization of a small segment of the *Drosophila melanogaster* genome (PhD).

Molecular Evolution & Systematics Group, RSBS

NINHAM, J. Population genetics and molecular biology of an enteroparasitic gregarine and its grasshopper host *Caledia captiva* (PhD).

Molecular & Population Genetics Group, RSBS

REED, D.S. Molecular analysis of low activity glycerol-3-phosphate dehydrogenase variants in *Drosophila melanogaster* (PhD).
WILANOWSKI, T. Biochemical and molecular studies of glycerol-3-phosphate dehydrogenase in *Drosophila melanogaster* (PhD).

DIVISION OF ENTOMOLOGY, CSIRO, with joint supervision in the ANU

(Dr. P.J. GULLAN)

BAWDEN, A. Characterization of the replication strategy of *Heliothis armigera* stunt virus (PhD).
CAMPBELL, P.H. Biochemical characterisation of juvenile hormone esterase in *Drosophila melanogaster* (PhD).
CRNOV, R. The molecular basis of entomopoxvirus infectivity (PhD).
KAROTAM, J. Variation at the esterase 6 locus in *Drosophila simulans* and *D. mauritiana* (PhD).
KOSTAKOS, P. Insecticide resistance genes in *Drosophila* (Grad DipSc).
MORRISH, B. Regulation of esterase 6 in Drosophila (PhD).
ODGERS, W. Molecular biology of juvenile hormone induction of esterase 6 in *Drosophila* (PhD).
PARKER, A.G. Molecular analysis of insecticide resistance in the Australian sheep blowfly, *Lucilia cuprina* (PhD).
PINKERTON, A. Genetic transformation of *Heliothis* (Grad DipSc).
ROURKE, I.A. Hormonal regulation of juvenile hormone synthesis in *Heliothis* spp. (PhD).

SMYTH, K.A. Malathion carboxylesterase in *Lucilia* (PhD).
SMYTH, M.J. The biology of *Dialectica scalariella* (a leaf-mining moth) and its effect on *Echium* (Grad DipSc).
SUTHERLAND, T. Hormonal regulation of juvenile hormone synthesis in *Lucilia cuprina* (PhD).
van PAPENRECHT, E.A. Differences in the regulation of esterase 6 among sibling *Drosophila* species (PhD).
VICKERS, R. The influence of codling moth female sex pheromone on mating behaviour and its potential as a mating disruptant (PhD).

TASMANIA

UNIVERSITY OF TASMANIA
Department of Agricultural Science
(Dr. J.L. MADDEN)
HAIFENG, L. Leaf chemicals and host tree selection by the eucalypt-defoliating beetle, *Chrysophtharta bimaculata* (Oliver) (Coleoptera: Chrysomelidae) (PhD).
LAWANPRASERT, A. Response of hop (Humilus lupulus L) cultivars on Two Spotted Spider Mite (*Tetranychus urticae* Koch) infections (PhD).
MENSAH, R. Biology and integrated control of the psyllid, *Ctenarytaina thysanura* infesting boronia (PhD).
RATH, A. *Metarrhizium anisopliae* as a control agent for the Red-Headed Cockchafer, *Adoryphorus couloni* (PhD).

Department of Zoology
(Dr. A.A.M. RICHARDSON)
JACKSON, J. Taxonomy and functional morphology of three families of Trichoptera (PhD).
DORAN, N. Ecology of the cave spider, *Hickmania troglodytes* (Hons).
OLDMEADOW, D. Effect of stream flow on micro-distribution of benthic invertebrates (Hons)
DONALD, D. Effect of trout farm effluents on stream invertebrates (Hons).

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New Books

"*Heliothis* — Research Methods and Prospects" edited by M.P.Zalucki. 234 pp, 13 illustr, hardcover. Springer-Verlag, New York. 1990.

This new volume in the Springer Series in Experimental Entomology assembles in one handy reference all the research techniques and approaches used to study biology and ecology of *Heliothis* (and similar) species. Since these are the most serious agricultural pests in Australia this volume should be available to all applied and theoretical entomologists working in the agricultural field here. The book is comprehensive in its coverage of the following topics: defining genetical species; collecting, rearing, sampling and constructing life-tables; measuring predator impact and physiological development; measuring behaviour, migration, diapause, population genetics and resistance; modelling population dynamics. Intended for everyone from beginning research students to experienced workers, this volume contains insights into the problems and questions entomologists are likely to encounter. It is priced at US$79 and is available through scientific booksellers.

"Insects as Predators" by Tim New 178pp, 44 illustr, soft cover. Publ by New South Wales University Press in association with the Australian Institute of Biology. Price Aust$19.95.

Insects are the most efficient and inventive predators on earth. From caddisfly larvae, weaving underwater nets to catch their prey, to the lightning reflexes of the preying mantis, the sheer range of predatory strategies makes insects central to a more general understanding of predation in all animals. This book, the first authoritative Australian work on insect predators, also looks at the way we could harness these patterns to control insect pests safely and effectively. This volume is the fifth in the Australian Studies in Biology Series being coordinated by the Australian Institute of Biology.

Biographical Note

Reginald G. Bartlett
23 December 1885 –1955

Reginald Bartlett became entomologically well known in south Queensland in the last 20 years of his life when he formed a show/teaching collection of foreign and Australian butterflies at Tamborine Mountain.

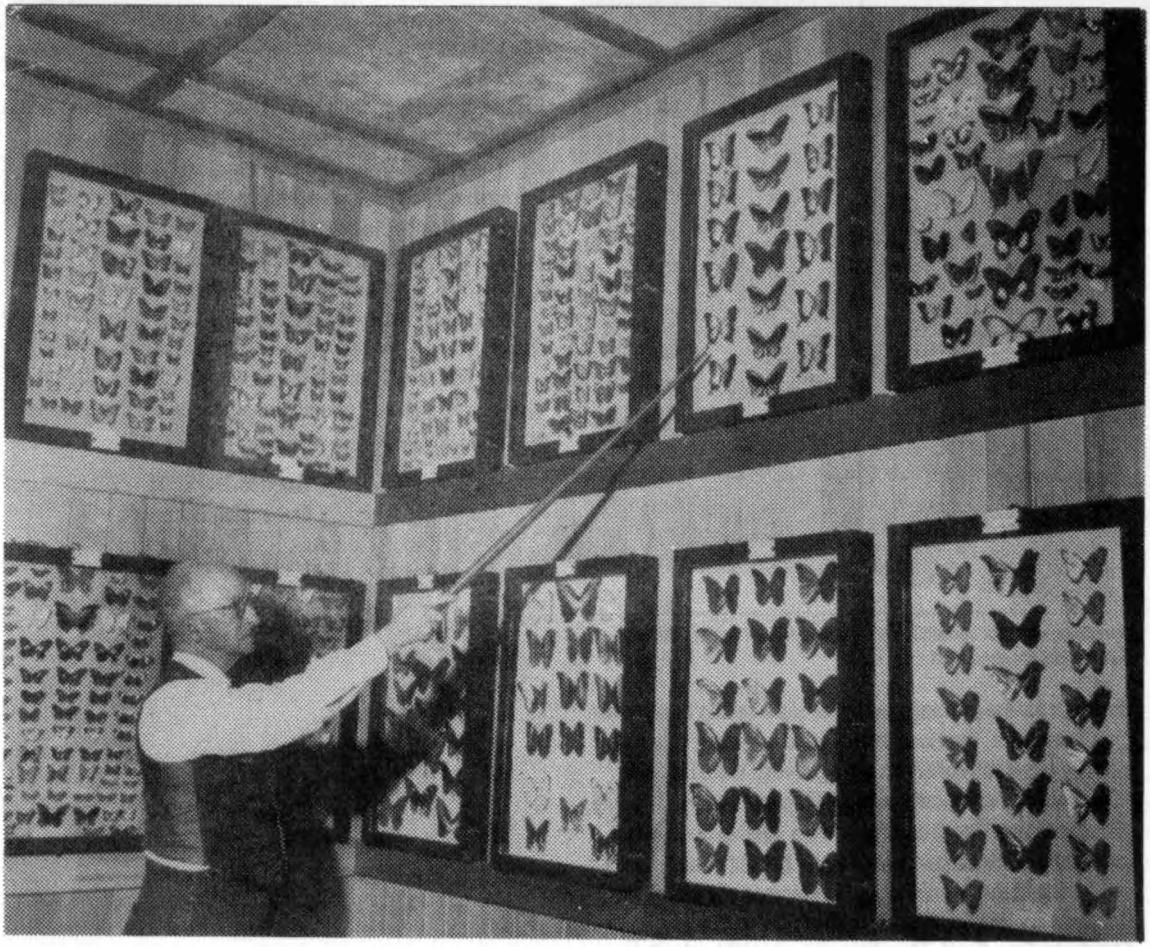
He was born in Brisbane in 1885 and entered the teaching profession at an early age as a Pupil Teacher at the Brisbane Normal School. He later taught at Mount Perry, Rosedale and Buderim before leaving teaching to become a banana expert (?inspector) at Murwillumbah for a number of years. He returned to teaching at North Tamborine School on Tamborine Mountain about 1924 and taught there until his retirement in 1950.

Tamborine Mountain was an area of great natural beauty, much frequented by visiting naturalists, and home to

such well known resident naturalist families as the Curtises and the Geissmanns. But there is no evidence of earlier insect interest by Reginald Bartlett until 1934 when he (quoting a *Womens Weekly* interview of January 2, 1952): 'hit upon the scheme of exchanging butterflies with collectors abroad to enliven geography lessons and help teach natural history. He selected names from a naturalists directory of the world, and sent out a circular letter asking for specimens to exchange for Australian types. "We were swamped with replies," Mr Bartlett told me. "The children eagerly traced the course of letters and competed for stamps on the envelopes." '

What started as a simple geography exercise for his school pupils grew into a major preoccupation of the North Tamborine School and a generation of children in the late 1930s and the 1940s have clear memories of Mr Bartlett and the school's butterfly exchange programme. The collection of world butterflies grew to substantial size (8000 specimens) and was displayed in glass cases both in the school and in Mr Bartlett's residence. There they became a popular

School teacher Reginald Bartlett shows off some of the collection he formed with the help of pupils of the North Tamborine School



A few specimens of Butterflies including the "Dead Leaf" variety
Under Vice-Regal Patronage
BARTLETT'S BUTTERFLIES
North Tamborine, Qld.
WILFRED HEMINGWAY, Esq., HON. ENTOMOLOGIST AUCKLAND MUSEUM. A NOTED COLLECTOR & WORLD TRAVELLER - STATES THAT THE BARTLETT COLLECTION IS THE BEST PRIVATE COLLECTION IN THE SOUTHERN HEMISPHERE. ALL CONTINENTS ARE REPRESENTED IN 38 CASES OF INCREDIBLE BEAUTY. YOU CANNOT AFFORD TO MISS THIS UNIQUE OPPORTUNITY TO INSPECT DOG FACE BUTTERFLIES OF MEXICO, OWL BUTTERFLIES, GIANT 12-INCH MOTHS, BUTTERFLIES WITH NUMBER PLATES, FAMOUS "DEAD-LEAF" BUTTERFLY OF INDIA, VICTORIA REGIAS OF SOLOMON ISLANDS, DAZZLING AND PUZZLING MORPHOS OF SOUTH AMERICA.
INSURANCE VALUE - ONE THOUSAND POUNDS
ADMISSION TICKETS from CURATOR at BELVEDERE CAFE.

Advertising leaflet for Bartlett Collection when it was on display beside the Belevedere Cafe about 1951.

diversion for the growing number of sight-seeing tourists visiting Tamborine. Two local butterflies that were highly desired by overseas collectors were the Richmond Birdwing (*Ornithoptera richmondia*) and the Regent Skipper (*Euschemon rafflesia*) and these were used to good effect for exchange. Specimens were never bought or sold.

At one stage the collection was temporarily brought to Brisbane and put on show to raise money for the children's Christmas Tree Fund. The show was opened by the then Minister for Public Instruction, F.A.Cooper. A case of butterflies was prepared by Bartlett for presentation to Winston Churchill in 1946.

After his retirement in 1950 the collection was mounted as a charged tourist attraction next to the Belvedere Cafe at Tamborine with the guarantee that: "If not satisfied after inspection, money will be refunded by Curator on proof of a visit to a better collection"!

After his wife's death Bartlett left Tamborine to live for several years in the early 1950s at Labrador, Southport (part of today's Gold Coast). Parts of the collection were placed on display at the Southport Surf Pavilion and at the Surfers Paradise Hotel. During this period Bartlett did some relief teaching at the local school and formed the Periwinkle Nature Club for the area's children. In 1952 he prepared a special red cedar case of butterflies for presentation to Queen Elizabeth on her State visit to Queensland. She accepted on behalf of her children, Prince Charles and Princess Anne.

The Bartlett Collection was eventually sold to the Currumbin Zoo which went bankrupt and closed soon after. The remnants of the collection, now in poor condition from fading and exposure, are now at the Currumbin Bird Sanctuary which is under ownership of the National Trust.

Reginald Bartlett left Southport to live with relatives at Cooyar in his last years and died at Toowoomba in 1955.

I am grateful to the descendents of Reginald Bartlett for loan of clippings and photographs from which this information was compiled.

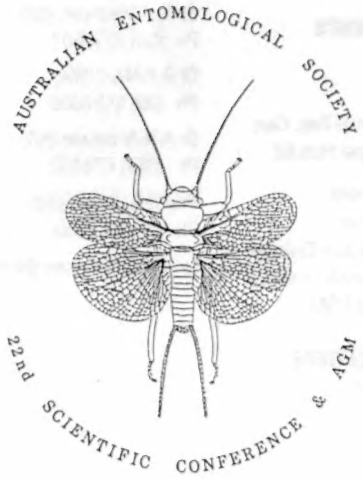
Geoff MONTEITH
Queensland Museum

AUSTRALIAN ENTOMOLOGICAL SOCIETY

22nd AGM and Scientific Conference

Melbourne

14–19 July, 1991



MELBOURNE 1991

Scientific Sessions

The Impacts of Exotic Insects in Australia
Invited speakers will overview the topics of biological control, agricultural insect pests, and the effect of exotic insects on native flora and insects in terrestrial and freshwater environments. Papers are invited on these or other topics related to exotic insects in Australia.

Insects in Vulnerable Environments in S.E.Australia — With Particular Reference to Alpine and Aquatic Faunas
Invited speakers will address the nature and distribution of these faunas, their vulnerability to environmental changes and their conservation. Contributed papers are invited on alpine or aquatic faunas, or insects in other vulnerable environments.

Genetic Engineering and Biotechnology
Invited speakers will review the theory and application of genetic engineering and biotechnology in entomology. Contributed papers are invited.

Taxonomy Workshops
Workshops will be held to discuss taxonomic methodology and to update taxonomic knowledge of specific groups if there is sufficient interest. Delegates who wish to participate are invited to contact the conference organisers.

Contributed Sessions
Papers will also be accepted on all aspects of Australian Entomology not directly related to the major themes.

Social Events

Welcoming Dinner, Cocktail Party, Annual Dinner, Excursion to Healesville Sanctuary.

Contact: Janet Horne (convenor), Paul Horne, Andrew Henderson, Jim Woodward (biotechnology), Mali Malipatil (taxonomy) at the Plant Research Institute, Swan St, Burnley, 3121, Phone (03) 810 1511, for further information.

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